NEW BOOKLETS AND LEAFLETS

Direct Advertising of manufacturers received recently.

Acorn Opalite

A catalog has been received from the Acorn Opalite Metal Specialities Co., 1052 West Monroe St., Chicago, which contains illustrations and descriptions of a complete line of equipment for the soda fountain, cafeteria or restaurant. Much of the equipment is so constructed that it may be used with either ice or electric refrigeration.

Bohn

A 99 page catalog (8½x11) has just been released by the Bohn Refrigerator Co., St. Paul, Minn. On each page it contains an illustration of a Bohn refrigerator and on the reverse side of the page appears the specifications for that particular model. Of particular interest to electric refrigeration people will be the Bohn Sanitor, designed especially for electric refrigeration.

Accompanying the catalog were four envelope stuffers or direct mail pieces. The titles of these four booklets are as follows: "Thirty-one Years of Building Bohn," "Cork Insulation a Bohn Feature," "The Hygenic Superiority of Bohn," and "Super Quality Refrigeration."

Challenge

A copy of the forty-second annual illustrated catalog has been received from the Challenge Refrigerator Co., Grand Haven, Mich. Photographs and descriptions of the various models manufactured as well as cross section views showing wall construction are included in the catalog.

Electro-Kold

From the Electro-Kold Corp., Spokane, Wash., have been received three portfolios in loose leaf form containing reproductions and specifications on the commercial, household and apartment house Electro-Kold models.

General Electric

The General Electric 5 point star plan for 1928 is elaborately pictured and described in a 48 page book, (11x14) issued by the electric refrigeration department of the General Electric Co., at Cleveland, O.

The 5 point star plan is made up of the following media: advertising in national magazines, co-operative newspaper advertising, direct mail campaigns and selling helps, outdoor advertising and store display—inside and outside and sales help materials. The book is divided into 5 sections, one section being devoted to each of the different media.

Leonard

An attractive loose leaf portfolio has been received from the Leonard Refrigerator Co., Grand Rapids, Mich., in which are contained individual photographs and specifications on Leonard cleanable cabinets designed for use with electric refrigeration only. These models have the new white porcelain exterior with a trim of French gray porcelain.

Maine

From Maine Mfg. Co., Nashua, N. H., comes a 60 page catalog carrying the complete line of Maine refrigerators in both illustration and description.

Ranney

A 45-page catalog comes from the Ranney Refrigerator Co., Greenville, Mich. The construction of the various models is brought out through both illustration and description and a page is devoted to the subject of the care of the refrigerator.

Seeger

A folder has been received from the Seeger Refrigerator Co., St. Paul Minn., illustrating in colors the new Seeger porcelain cabinets, finished in exteriors of pastel shades. A broadside has also been received showing the interior views of the new all porcelain cabinets in the Seeger four-in-one line.

JEWETT FINDS PHOTOS OF ACTUAL INSTALLATIONS BETTER THAN MINIATURES

The success which the Jewett Refrigerator Co., of Buffalo, has had in using photographs of actual installations of their equipment in getting new sales is told of by E. B. Jewett, president of the Jewett Refrigerator Co., appears in the April issue of *Printer's Ink Monthly* under the heading, "To Sell the Bulky Products—Models or Pictures?"

Mr. Jewett discusses the various methods of presenting a bulky product, such as the refrigerator, pointing out the disadvantages of the use of minature cabinets and blue prints, and telling of the effectiveness of good photographs of installations of the type in which the prospective purchasers will be most likely to be interested. He also brings out the fact that the salesman who presents these pictures to the prospect is not only a trained salesman but is also sufficiently trained in the construction and installation of Jewett refrigerators to enable him to talk intelligently to his prospect. In closing the article, he says, "It is a physical impossibility for our salesmen to use samples. The next best thing is to get a true likeness of our products under actual working conditions into the hands of the prospect. Not the sample of the product itselm but a likeness—something in the hand. And the camera's eye supplies the need most efficaciously."

"PLEASE CHANGE MY ADDRESS"

Recent movements of Electric Refrigeration News subscribers as indicated by requests for changes in mailing addresses.

Asmussen, A. J., from 85 Alger to 2281 W. Grand Blvd., Detroit, Mich.

Baker, E. H., Jr., from 4916 St. Clair St. to 971 E. 63rd St., Cleveland, O.

Black, J. E., from 601 Third Ave., Williston, N. D., to Springfield, Mo.

Hage, Fred S., from 1403 Fifth St. to 1215 Fourth St., San Diego, Calif.

Hale, Roger W., from Kelvinator, Inc., 161 Sidney St., Cambridge, Mass., to 164 State St., Hartford, Conn.

Mayberry, Franklin S., from 446 Niagara Ave. to 631 Ellicott Square, Buffalo, N. Y.

Murphy, J. A., from 6767 Stony Island Ave. to 6409 Drexel Ave., Chicago, Ill.

Peak, W. O., from 1205 West Illinois St., Evansville, Ind., to 714 Hart St., Princeton, Ind.

Ramclaw, A., from 2721 East 75th St. to 2830 East 79th St., Chicago, Ill.

Ryan, M. L., from 308 Columbia St. to R. D. 2, Box 43-A, Toledo, O.

Schleuter, George, from 470 Mandanna Blvd., Oakland, Calif., to Hanford, Calif.

Seeger Refrigeration Co., from 705 Burnam Bldg. to Room 2004, 228 N. La Salle, Box 1, Chicago, Ill.

Sharon, Harold, from 309 Whitaker Rd. to Carolina Pwr. Co., Raleigh, N. C.

Zoellner, Herbert, from 3420 Beaumont Ave. to 3600 Warsaw Ave., Cincinnati, O.

A. E. Russell Appointed Manager of Domestic Sales For Boston

Amos E. Russell, formerly sales manager for Kelvinator in Albany, N. Y., has recently been appointed manager of domestic sales for Boston, by J. S. Sayer, New England District manager for Kelvinator Corp., Kelvinator maintains a factory branch in Boston, with offices and a show room at 749 Boylston St.

Manufacturers of Heat Regulators Consolidate

Announcement has been made of the consolidation of the businesses of the Minneapolis Heat Regulator Co. and Honeywell Heating SpSecialties Co., of Wabash, Ind. Both companies manufacture similar products, but the former caters largely to the individual home owner, while the latter caters to the manufacturers of heating appliances.

THE ELECTRIC SERVANT WILL NEVER BE POPULAR

From *Detroit News*

Appointed Kelvinator Dealer

The Southern Plumbing Co., 1015 Iturbide St., Loredo, Texas, has been appointed local Kelvinator dealer.

Appointed G. E. Dealer in Helena, Montana

The Palmquist Electric Co., 420 North Main St., Helena, Mont., has been appointed county agent for General Electric refrigerators.

Takes Zerozone Agency

The Service Radio & Electric Co., 97 West Main St., Uniontown, Pa., has recently taken on the agency for Zerozone electric refrigeration.

J. F. Pedden Joins Frigidaire

J. F. Pedden, formerly with the publicity department of the Westinghouse Electric & Manufacturing Co., has been placed in charge of the "Frigidaire Sales Bulletin" of the Frigidaire Corp., Dayton.

Appointed General Electric Dealer

L. A. Reynolds, owner of the Reynolds Electric Co., Farmington, Mo., has been appointed local General Electric refrigerator dealer.

Kelvinator Has New Symbol On Tickers

A new symbol, K. L. B., has appeared on the stock exchange tickers. This stands for the shares of the Kelvinator Corp., formerly the Electric Refrigeration Corp., Detroit.

Brownwood, Texas Frigidaire Dealer In New Quarters

The Ray Morgan Battery Co., Brownwood, Texas, dealers in Frigidaire and Delco Light systems, has recently moved into its new building at 200 West Baker St., which was erected to provide larger quarters made necessary by increase in business during the past several years.

Missouri Public Service Co. Salesmen attend School At Flint, Mo.

Frigidaire salesmen of the Missouri Public Service Co., attended their regular monthly sales school in Flint, Mo., on March 19 at the Parkway Tea Room. School was conducted by A. C. Briggs, sales supervisor of the Parsons Electric Co., Kansas City.

Popular Science Offers Booklet on Refrigeration

"Refrigeration in the Home," is the title of a booklet which has been prepared by the Popular Science Institute of Standards, 250 Fourth Ave., New York City. The booklet is described as a complete manual on refrigeration, with illustrations, and was prepared by the engineers of the Popular Science Institute. Points to be considered in purchasing a refrigerator are discussed as well as the advantages of various types of machines.

Fast Work

Sales manager, Sullivan, of Beaudette & Graham, Copeland distributors in Boston, answered an inquiry from a Boston apartment house owner, which was referred to him from the factory. He received the tip with the morning mail, made an appointment for 2:30 that afternoon and at 6:30 the contract was signed for a multiple installation with 6 all porcelain Benjamin Crysteel refrigerators, Copeland equipped.

REQUESTS FOR INFORMATION

The following inquiries have been received by Electric Refrigeration News. Readers who can supply information on these subjects are invited to write at once, referring to the Query number.

Who Wants a Wholesale Outlet in Minneapolis?

Query No. 84. A Minneapolis wholesale distributor writes as follows: "Can you furnish us with a list of electric refrigerator concerns that are desirous of letting out a franchise in this territory?"

How Are Self-Contained Units Packed for Export?

Query No. 85. A manufacturer of electric refrigerators asks this question: "We are very much interested in obtaining information as to what practice is being followed by the trade in regard to the assembling of electric refrigerators for export. We are particularly interested in knowing what is being done with shipments to Cuba; whether the cabinet, compressors and cooling units are being shipped in separate crates; whether the cooling unit is assembled in the cabinet, and the compressor shipped in a separate crate or whether all three are completely assembled for shipment."

Is There a Book in Spanish on Electric Refrigeration?

Query No. 86. The export department of an electric refrigerator manufacturer writes as follows: "Can you give us the names and addresses of publishers of a book on electrical household refrigeration in Spanish?"

Vinegar Manufacturer Has a Cooling Problem

Query No. 87. A New England vinegar works gives us this problem; "In a recent issue of the *Literary Digest* there was an article on freight car refrigeration, using silica gel and intermittent gas heat. We have a problem of cooling about 600 gallons of vinegar per hour from 80 degrees F. to 40 degrees F. to which this new method of refrigeration might be applied.

"Your publication was suggested to us by a local refrigerating concern as the most desirable source of information on this use of silica gel and gas in connection with our refrigeration problem.

"We shall greatly appreciate any information you can give us as to the equipment of a manufacturer from whom we can get further details."

Mrs. Cornell Broadcasts Talks on Refrigeration

Mrs. Katherine G. Cornell, of the Kelvinator home service department, was in San Antonio, Texas, as guest of the Kelvinator San Antonio Co., from March 20 to 23 and lectured on the subject of the use of electric refrigeration in the home. Arrangements were made with station WOAI for Mrs. Cornell to broadcast a brief message to the women of San Antonio each morning during her stay.

Electro-Kold Appoints Boise Distributor

Electro - Kold Corporation, Spokane, Wash., announces the appointment of Oakley & Sons, Boise, Idaho, as Electro-Kold distributors for Southwestern Idaho.

THE CONDENSER

A CLASSIFIED COLUMN OF OPPORTUNITY

REPLIES to box number advertisements should be addressed to Electric Refrigeration News, 554 Maccabees' Bldg., Detroit, Mich.

ADVERTISING RATES—this column only:

POSITIONS WANTED (special rate if paid in advance): 50 words or less, one insertion, $2.00, additional words 4 cents each. Three insertions, $5.00.

POSITIONS AVAILABLE, For Sale, Business Opportunities, and all other classifications (special rate, if paid in advance): 50 words or less, one insertion, $3.00, three insertions $8.00, additional words, 5 cents each.

LINE RATE (open account): 50 cents per line.

POSITIONS AVAILABLE

Would like to get in touch with a refrigerating engineer to complete an idea on electric refrigeration. Electric Refrigeration News, Box No. 68.

We are now manufacturing gas ranges and are anxious to add electric refrigerators for domestic use to our line. Are therefore looking for high class man capable of handling, designing, manufacturing and selling on a profit sharing basis. No money required. O'Keefe & Merritt Co., 2700 Mines Avenue, Los Angeles, Calif.

POSITIONS WANTED

ENGINEERING EXECUTIVE,

connected with electric refrigeration for ten years, desires connection with responsible manufacturer in temporary or permanent capacity as consulting or chief engineer. Capable of taking complete charge of engineering and manufacturing. Inventor and owner of widely used patents. Well acquainted with patent situation. Box 52.

Kelvinator-Nizer sales executive, now employed as sales manager, desires new connection with a well financed firm which will give full cooperation. Knowledge of American and Canadian business methods. Prefer Kelvinator-Nizer connection but have working knowledge of other machines. No particular preference as to location. Box No. 71.

Subscription Order

ELECTRIC REFRIGERATION NEWS,
554 MACCABEES BUILDING, DETROIT, MICH.

Please enter my subscription to Electric Refrigeration News.

Rates effective April 1, 1928

United States and Possessions:

☐ $1.50 per year. ☐ Three years for $3.00.

All other Countries:

☐ $1.75 per year. ☐ Two years for $3.00.

I am enclosing payment in the form of

☐ Check ☐ P. O. Order ☐ Cash

Name.....

Street Address.....

City and State.....

Remarks:.....

ELECTRIC REFRIGERATION NEWS

The business newspaper of the electric refrigeration industry

VOL. 2, NO. 17, SERIAL NO. 41 | Copyright 1928 by Business News Pub. Co. | DETROIT, MICHIGAN, APRIL 25, 1928 | Entered as second class matter August 1, 1927, at the Post Office, Detroit, Michigan. | PRICE TEN CENTS

DETROIT ENGINEERS HEAR EXPLANATION OF SILICA GEL UNITS

Other Speakers Discuss Aviation, Patents, Retail Selling and Co-operation

A variety of interesting subjects were presented at the monthly meeting of the Detroit section of the American Society of Refrigerating Engineers which followed a dinner at the club house of the Detroit Engineering Society, 478 West Alexandrine St., Detroit, Thursday evening, April 19. F. B. Riley was chairman of the meeting.

Leighton W. Rogers of the Department of Commerce, Washington, D. C., formerly commercial attache of the American Embassy at Warsaw, Poland, who was in Detroit attending the Air-Craft Exposition, addressed the meeting on commercial aviation and compared the development in the United States with that in European countries. As a representative of the Department of Commerce he spent many years in European countries making a study of aviation and therefore presented the subject from first hand experience.

Commercial air traffic in Europe, in so far as it concerns the shipment of goods by air may be divided into three classes of merchandise: (1) Emergency shipments which may consist of most anything, for which delivery is required in a hurry without regard to expense. (2) Money and documents are shipped by air to a large extent because this method is considered safer than ground travel. (3) Luxury goods, including foods, flowers and other perishables represent an important part of the merchandise carried.

C. C. Thomas, engineer of Copeland Products, Inc., gave an interesting account of the high points in the development of silica gel refrigeration equipment illustrating his talk with charts showing typical designs and applications. Since heat of a comparatively low temperature is used to create the refrigerating cycle, it is possible to operate the silica gel machine with waste heat and a number of possible combinations were described by Mr. Thomas.

The theoretical operation of silica gel as a refrigerating medium appears to be comparatively simple. In brief, heat is used to drive the refrigerant from the silica gel which is contained in a tube. The liquid collects in a receiver which forms a part of the chilling unit. By stopping the heating action, a slight cooling of the gel contained in the tube causes it to begin the adsorbing action thereby evaporating the refrigerant from the receiver. This, of course, rapidly reduces the temperature of the chilling unit and produces the refrigerating effect. The high adsorbing quality of the silica gel provides the basis for its effectiveness as a refrigerating medium. When the gel has adsorbed the liquid, the heat is again applied and the cycle is repeated.

Pagelson Gives Valuable Advice to Inventors

Edward N. Pagelson, patent counsel, formerly connected with the General Motors Corp., explained the peculiarities of the patent laws in a most interesting and entertaining manner. A patent, said Mr. Pagelson, is presumed to give you the right to manufacture your invention, whereas it actually does nothing of the kind. The fact is that a patent gives the right to *stop someone else from making it.* There are four principle classes of patents, namely, (1) design, (2) process, (3) product and (4) machine patents.

Mr. Pagelson called attention to many common misunderstandings regarding patents which lead to disappointments to inventors. According to the story books, Mr. Pagelson said, the inventor keeps his idea a profound secret and does not bring it to light until the device is fully developed. If you have an idea for an invention, he advised, the first thing to do is *tell someone* and then make a record of it. For some peculiar reason, the law seems to regard all inventors as liars, and therefore it is very important to have substantial witnesses who will testify as to the exact date on which the inventor conceived the idea or made a particular point of progress in the development of his service.

A blue print is one of the most effective methods of recording an idea, since it cannot be corrected or changed subsequently. Make a sketch of your design or your idea of a machine and have it blueprinted, he said, and then have two or three people sign their names on the back, being sure to put in the date. You then have substantial evidence, with witnesses who may be called into court to testify for you, as to the exact time you made a certain invention. Dates are particularly important owing to the fact that it frequently happens that two or more people get the same idea at approximately the same time.

The fact that a device is not "on the

(*Concluded on Page 2, Column 2*)

Spring Flower Show in Dealer's Window Arouses Early Interest in Electric Refrigeration

Combined Spring Flower Show and Frigidaire Display conceived by G. H. Smith, sales manager of the Portsmouth, Va., office of the Virginia Electric and Power Co. **See story on Page 10.**

H. B. RECTOR COMPANY DISPLAYS G. E. UNITS IN DISTINCTIVE SALON

The H. B. Rector Co., Inc., General Electric refrigerator dealers, recently opened their new refrigeration salon at 318 Stockton street, San Francisco.

Providing a pleasing setting for merchandise of this character, the store has been termed one of the most striking in the down town district. Many new ideas in effective interior decoration make the salon distinctive and unique. Simple furnishings and the general scheme of display give the store distinguishing touches.

Placed on a floor of cork tiling done in harmonizing shades of dull red, the refrigerators have a background of California stucco in sky-blue and buff, enhanced by Spanish wrought iron lighting fixtures.

Furnishings of the store include Windsor tables and chairs in walnut and rich rugs and hangings. A rare piece of Venetian tapestry reproduces one of Aesop's Fables.

Offices of the new firm on the mezzanine floor are furnished in Italian walnut. Interior architecture reveals a Norman-English trend in harmony with the California idea of Spanish effects.

The H. B. Rector Co., Inc., with branch salesrooms in San Rafael and Burlingame, has been designated as the dealer organization of the General Electric Co. refrigeration division for San Francisco, San Mateo and Marin counties.

Retail sales and dealer activities are under the personal direction of H. B. Rector, president and general manager of the company. Fred S. Haines is vice-president and treasurer, and Fred S. Haines, Jr., is assistant to the general manager.

ELECTRIC REFRIGERATION HAS A SIMILAR PROBLEM

A statistic is a hardy creature. Once give an incorrect one the breath of life through use, and nothing short of violent death will kill it. A statistic of this species on burners, has long been current.

"It is reasonably estimated," reads an item in the Milford, Mass., *News,* "that 2800 different types of oil burners are now offered for sale." Another figure commonly used for this is 1700. Both are absurd. This issue of FUEL OIL carries a mechanical analysis of one hundred and forty-nine burners, which is probably within ten per cent of the total of all makes of burners used for generating steam. True, the total of portable burners and special burners of various types might make the list of active manufacturers double this number, but it is doubtful if the total number of firms actually producing burners of every kind would exceed four hundred. It is high time to find a final resting place for these inflated statistics on the kinds of burners being sold.—*Fuel Oil.*

N. E. L. A. ISSUES

Central Station Activities to Be Featured in Three Consecutive Numbers

Following the plan which proved so popular last year, ELECTRIC REFRIGERATION NEWS will devote three coming issues to the electric refrigeration activities of central stations. The issues of May 23, June 6 and June 20 have been selected for this presentation on account of the importance of the National Electric Light Association's annual convention to be held at Atlantic City, June 4 to 8.

The May 23 issue, which will be distributed prior to the convention and on the opening day, will contain all available information regarding the sales of equipment by central station companies and will report the progress of the "Selling the Idea" campaign sponsored by the N. E. L. A. Refrigeration Committee under the chairmanship of G. B. Richardson.

The June 6 issue, which will be distributed at the convention on Wednesday, will carry a special picture section edited and produced in Atlantic City, showing the electric refrigeration exhibits and interesting events at the convention.

The June 20 issue will report the convention proceedings affecting the future development of electric refrigeration and give the later news of this important gathering.

Attendance at the N. E. L. A. convention usually reaches 10,000. It is generally considered the biggest event of the year in the electrical industry and attracts electrical men from all parts of the world.

INVENTOR OF ELECTRO-KOLD REFRIGERATION UNIT IS DEAD

The inventor of the Electro-Kold refrigerator is dead. L. J. Kimmel, who contrived and designed the machine manufactured by the Electro-Kold company at Spokane, Wash., succumbed to an attack of heart trouble in that city, after suffering from this illness for several months. He was forty-eight years old.

Soon after the war, Mr. Kimmel began to work on plans for his new electric refrigerator and worked out his invention and its subsequent manufacture in Spokane through the aid of local capital. The Electro-Kold company was organized, and Mr. Kimmel was made factory superintendent and vice-president. He devoted his time lately to the research and development side of the business.

KELVINATOR REPORTS NET PROFIT IN FIRST QUARTER OF THIS YEAR

Issuance of Stock Will Liquidate Bank Obligations

Net earnings of $3,790.43 for the quarter ending March 31, 1928, as compared with a loss of $443,834.44 for the same quarter of last year, are reported by C. K. Woodbridge, president of Kelvinator Corp. For the month of March, 1928, net earnings of $256,713.10 are reported. For the first half of the fiscal year ending March 31, 1928, operations show a net loss of $463,682.35, as compared with a loss of $985,202.21 for the same six months period of last year. On March 31, 1928, deferred selling and advertising expenses totalled $32,113.85, as compared with $381, 597.79 on March 31, 1927.

The directors decided on Thursday, April 19, to sell 125,000 shares of treasury stock to a group consisting principally of Detroit interests. The proceeds of this sale, together with receipts from the current operations of the business, will place Kelvinator Corp. in a position to liquidate entirely its bank obligations of $3,684,000. Sales of Kelvinators have been running each month from 30 to 60 per cent ahead of corresponding months of last year. The improvements in design and operating results accomplished this year in the Nizer unit, produced for use in the ice cream, dairy and other commercial fields, have stimulated sales and demand for these units.

MANY REFRIGERATOR DISPLAYS AT MILWAUKEE HOME SHOW

Electric refrigeration displays played an important part in the sixth annual home show held at the Milwaukee Auditorium March 17 to 24. One of the first displays of colored refrigerators in the city attracted much attention among those who visited the show. Awards at the show totaled $10,000 among which were several refrigerator awards, one a Frigidaire, Model No. T-5, valued at $195.00 donated by The Stover Co.

The Milwaukee *Journal* ran a special four page refrigeration edition along with their regular Sunday edition. Among the refrigeration firms which exhibited were the Electric Refrigerator Co., General Electric; The Electric Co., Kelvinator; Gross Hardware Co., Norge; The Three Schuster Stores, Servel; Lemke Electric Co., Allison; The Stover Co., Frigidaire; Zerozone Wisconsin Co.; Petley-Carver, Inc., Wayne; Copeland Refrigerator Co., and the Electric Household Shops, Inc. Chilrite.

MANUFACTURERS ARE INVITED TO ATTEND N. E. M. A. CONFERENCE

National Electrical Manufacturers Association Calls Meeting in Detroit May 9

Another step in the direction of an organized industry and one which offers promise of providing facilities for the solution of common problems which have concerned electric refrigeration leaders for some time, was taken with the issuance of a general invitation to all manufacturers of electric refrigeration equipment to attend a conference at the Detroit Athletic Club at 10 A. M., Wednesday, May 9, 1928. The invitation, which was issued by Alfred E. Waller, managing director of the National Electrical Manufacturers Association under date of April 19, reads as follows:

Letter to Executives

"You are invited to be present at the Detroit Athletic Club at ten A. M., Wednesday, May 9th, at a conference which is being called at the request of a number of the executives of companies manufacturing electrical refrigeration. They feel that the industry is in immediate need of an organization to consider problems requiring concerted action.

"The conference is therefore being called to determine:

"(1) What are the problems requiring concerted action?

"(2) How can the desired result be most effectively and economically attained?

"(3) How soon can any plan be made effective?

"May we have your assurance that you will be present to contribute your ideas and advice?"

The idea of securing the assistance of the N. E. M. A. in developing a workable plan for co-operative activity has been discussed by prominent men in the industry for a number of months. Considering the many conflicting viewpoints in the industry, due in a large measure to the lack of personal acquaintanceship in a new and rapidly growing field, it is believed that there will be a great advantage in having the leadership and stabilizing influence of the National Electrical Manufacturers Association. The set-up of the N. E. M. A. lends itself readily to such an undertaking owing to the fact that it already comprises some 40 groups of manufacturers, each of which carries on its own activities more or less independently and, at the same time, all groups may act concurrently on matters of general policy which affect all interests of an electrical character.

A Well-Established and Widely Recognized Organization

Other considerations which have stimulated interests in the ideas of a relationship with the outstanding organization of electrical manufacturers, include the advantages of the established headquarters office and staff located at 420 Lexington Avenue, New York City, and the working relations established between the N. E. M. A. and such organizations as the American Engineering Standards Committee, the National Electric Light Association, and other bodies directly concerned with standardization, legislation, codes of practice, patents, safety, business ethics, etc.

Upon receipt of information regarding the proposed meeting, ELECTRIC REFRIGERATION NEWS took cognizance of the fact that a considerable number of manufacturers of refrigeration equipment, being comparatively new in the electrical field, might not have had the opportunity to become acquainted with the activities of the N. E. M. A. and therefore immediately wired Managing Director Waller, requesting a statement for publication. Mr. Waller's article, outlining the general aims, functions and facilities of the Association, appears on page 3 of this issue.

It is understood that the invitation reprinted above has been issued to the principal executives of all companies manufacturing electric refrigeration machines for household and commercial use as indicated by the Directory published in the March 28 issue of ELECTRIC REFRIGERATION NEWS. Under date of April 23, Stewart N. Clarkson, assistant managing director of the N. E. M. A., wired the NEWS as follows:

"If possible, announce Detroit ninth conference in this week's NEWS and issue invitation to any one who may have been overlooked."

It is therefore understood that the meeting is open to all executives of manufacturers engaged in the production of equipment, commonly understood to comprise the electric refrigeration field and that their attendance is earnestly desired in order that any action taken may be truly representative of the entire industry.

KELVINATOR DEALERS AWARDED PRIZES AT NEW YORK CONVENTION

Kelvinator dealers and distributors from New York, Connecticut and New Jersey were present at the annual sales convention of Kelvinator Sales Corp., New York City, held at the Hotel Commodore on Saturday, April 7. This meeting was one of a series of district conventions which have been conducted by Kelvinator factory executives in principal cities throughout the country. It was attended by 300 dealers and their representatives from the states mentioned above comprising the New York district.

A feature of the convention was the unveiling of the 1928 Kelvinator line. Talks were made by the factory executives and the 1928 merchandising and advertising campaign was outlined in detail. An attractive model window display was set up on the convention floor. Luncheon was served at 12:30 p. m.

An interesting moment of the meeting was the presentation to Charles F. Buchman of the New York sales organization of a one hundred dollar prize by C. K. Woodbridge, president of Kelvinator Corporation. Mr. Buchman was the leading salesman in a "lucky leap year" contest which was conducted from February 1 to March 15. Mr. Woodbridge also presented a cabinet Kelvinator to Mr. Buchman's bride who attended the convention.

At the conclusion of the talks by factory executives, the dealers and their representatives were invited to participate in a contest. Prizes were awarded for the best individual stunt and sales story.

Mr. Dale of the J. C. Zook Organization, Inc., Jamaica, N. Y., won first prize for the best stunt.

Jack Earl, the New York retail sales organization, won second prize. Mr. Savatini of the New York commercial sales department, won first prize for the best sales story. Thomas Spence, of the New York wholesale department, won second prize.

Those attending the convention and the companies which were represented are given here:

Kelvinator Sales Corp.—W. O. Crabtree, J. K. Johnson, J. D. Cassidy, D. T. Flynn, T. J. Spence, Jr., L. P. Dorsett, W. E. Tripp, Carl M. Berry, G. E. Rogo, A. N. Delzeith, J. J. Dzorni, Wm. Robertson, J. Durnack, W. O'Neill, J. Kuhn, J. W. MacKie, M. J. Abrams, Anthony Bonfiglio, T. H. Babcock, T. E. Butler, E. F. Carson, P. Dignan Aram L. Heghinian, P. A. Dohme, D. N. Heller, J. H. Lehman, W. R. Maurer, H. C. Michelson, G. L. Orton, Achille Rametta, B. Sabatinni, Anton Sonneveld, F. J. Hughes, G. Hessler, F. McAnony, Frank DelMar, L. J. Doore, Roy Owen, Chas. Purdy, S. Knaff, S. Davidson, H. Moses, J. Leary, F. L. Housel, G. Behl, F. Vargas, Allen D. Seaman, N. A. Robinson, W. L. Dolan, J. Hummer, D. Harwood, Nils Steuch, C. E. Terry N. S. Gotshall, C. F. Buchman, G. C. Bartlett, R. J. Kerr, W. Stanton, D. H. Brown.

Kelvinator Leonard Shop—Mr. Hennig, J. B. Wight.

Universal Equipment Co.—J. Conway, L. J. People.

P. Simpson, Inc.—P. Simpson, I. Roe.

S. W. Haddock—D. Van Soosten, Walter Keyrouse, Vincent Rickle, R. Hollingshead, Ray A. Lynch, Albert Blake, F. Schopner, S. W. Haddock.

Fairbanks Electric Co.—F. McNamara, A. D. Mackenzie, Joseph Crane, Jr.

Servu Appliance Co.—A. Parker Terhune, J. S. Young, Edgar Buchanan

A. H. Karl, Inc.—Edward Moran, Wm. Killeen, J. Crowley, Robert Bissett, H. Van R. DeVries, Albert Sack, John Gilliman.

Mahoney & Harvey—W. Mahoney.

Flood & Jones—Mr. Flood.

Geo. W. Morse & Co.—G. W. Morse.

E. P. Burroughs & Son—Ernest Cramer.

New York Edison Co.—W. L. Foley, R. W. Baumbach, J. Welch, Mr. Cooley, Mr. Carr, Mr. Riley.

E. Benson—E. Benson.

A. T. Southard—Mrs. W. T. Ray, Carlton Perry, M. Mdkeel, A. W. Horton, A. Oakley, A. T. Southard.

C. W. Stephens & Co.—C. W. Stephens, E. A. McCallion, H. Thomas, Fred Fox, J. McCallion.

M. T. Engineering Co.—J. P. Torraca, Harry Wong Ti, Arthur Du Fresne, David Heller, Jean Marino, Philip Dohme.

Public Service Electric & Gas Co.—R. R. Young, F. D. Pembleton and 110 agents, merchandise assistants and salesmen.

J C. Zook Organization, Inc.—J. C. Zook, Geo. Dale, R. Lynch and 25 salesmen.

Dudley & Pratt—Mr. Pratt.

Cooper Electric Co.—Mr. Cooper.

L. Schutte—Mr. Schutte.

De Moll & Monroe—J. F. DeMoll.

H. K. Mulford—H. K. Mulford.

James D. Salter—J. D. Salter.

J. A. Palmer—J. A. Palmer, Jr.

Kahane Electric Co.—M. Kahane.

Mitchell Electric Co.—Mr. Mitchell.

Arthur Cummins—Arthur Cummins.

Brooklyn Edison Co.—E. A. Holmberg, T. J. Collins, A. Spensley, Messrs. Keegan, Furnas, Ray, Wright, Carcaterra, Tehr, Ryerson, Salavarry, Aheens, McCarty, Zimmerman.

Standard Kitchen Equipment Co.—H. Kaplan, A. Mathesius, L. E. Block.

Brooklyn Branch Kelvinator Sales Corp.—R. Isaksen and 12 salesmen.

Smith Plumbing Co.—G. Story.

Aldrich Electric Store—W. H. Aldrich.

Kelvinator of Red Bank—C. H. Rudloff, H. B. Shirk, J. W. Granfors, Alex. Kallio.

Port Chester, N. Y.—Nelson N. Terry, Lawrence Castolinie

Manning & Cahill—1 man.

Kelvinator Co., Northern N. J.—H. M. Ladd, M. E. Johns, Mr. Rennels, Miss Taylor, James Devine.

Mamm Stores—Messrs Broderich, Mead, Cole, Anderson, Craffley, Ward, Burke, Ford.

New York & Queens E. L. & Power Co.—Prescott Beach.

Banzer & Schluchtner—John Banzer.

DETROIT ENGINEERS HEAR TALKS ON SILICA GEL, PATENTS, AVIATION

(*Concluded from Page* 1, *Column* 1)

market" is no sign whatever that it has not been previously invented and patented. Inventors will save much time and expense by having a survey made at the Patent Office before attempting to complete the development of a new idea. The expense of a search is very little and it frequently shows that it is not worth while to spend further time on the idea. The fact that a thing has been made and used in some other country, even many years ago, is no bar to a patent in the United States. But if the thing has been described in a publication which has been out for two years or more, even if the article has been published in some other country, effectively prevents the issuance of a patent in the United States.

Advantages of Co-operation

F. M. Cockrell, editor of ELECTRIC REFRIGERATION NEWS made a short talk on the development of the market with particular reference to the opportunities for co-operation. As a rule, he said, salesmen do not like engineers and engineers do not like salesmen. Engineers, however, are usually more willing to co-operate among themselves than are salesmen. The competitive spirit has been so instilled in the minds of business men that it is very difficult for them to think of co-operation except in terms of giving up some of their rights to sell their own product in the most aggressive manner. Large manufacturing companies are frequently suspicious of co-operative movements because they are usually called upon to bear the greater share of the cost and they feel that they are only helping their small competitors to strengthen their position in their industry. Mr. Cockrell pointed out, however, that the large companies must necessarily bear a large part of the cost of developing the market for the product even when they spend the money for individual effort. The advantage of a co-operative plan is that it brings the small manufacturer into the picture and causes him to bear a part of the cost of the general educational effort.

Engineers have co-operated very effectively in standardizing parts and thereby reducing the total cost of production. There is much to be gained by the co-operation of sales departments in that such efforts reduces the total cost of educating the public to understand and appreciate the product. There are two parts to every sale. First it is necessary to sell the *idea* and then to sell the *product*. The preliminary educational work must be done, either individually or co-operatively, and the job may be done more effectively and economically by working together.

The direct advertising campaign sponsored by the Refrigeration Committee of the National Electric Light Association is an example of the opportunity to co-operate in selling the idea. Mr. Cockrell urged the manufacturers to give the fullest possible support to this movement.

Need for Trained Dealers

George M. Dwelley, vice-president of the Business Training Corporation and formerly general sales manager of the Kelvinator Company, explained the methods employed by his company in developing training courses for salesmen. He read a number of reports obtained by the organization from trained shoppers who are sent into the field to find out how refrigerators are actually sold by retail dealers. Many sales are lost, he pointed out, due to the inability or lack of desire on the part of the retail salesman to explain the product to the satisfaction of the prospective purchaser. He emphasized the fact that the investigation referred to deals only with sales practices in retail stores and does not cover the efforts of house-to-house salesmen who go out after the business.

According to the report from a wide variety of sources, there is a universal agreement that the *appearance* of the refrigerator is the most decisive factor in the sale. It overshadows the make or type of the machine and all of the fine points in the construction of the cabinet. Other factors are important, of course, but experience shows that the final selection hinges largely on the looks of the cabinet.

George B. Bright, National President of the American Association of Refrigerating Engineers, called attention to the Spring meeting of the Society which will be held in Detroit June 4 to 7. Plans are being completed for an attractive program and for the entertainment of visiting members who will come from all parts of the country.

N.E.M.A. is Prepared To Serve the Electric Refrigeration Industry

A Reply to Colonel Smith's Outline of the Need of an Industry Consciousness

By Alfred E. Waller, Managing Director, National Electrical Manufacturers Association

COLONEL Frank E. Smith, who recently addressed the New York Section of the American Society of Refrigerating Engineers, and whose remarks appeared in the March 28 issue of ELECTRIC REFRIGERATION NEWS, unconsciously issued an invitation to me, as Managing Director of the National Electrical Manufacturers' Association, to tell just how this organization is equipped to do all that he says the electric refrigeration manufacturers need, in addition to other things which he did not mention.

Colonel Smith said: "In the mechanical refrigeration field there is a dearth of information as to the results of laboratory tests, as to statistical data on production and sales and service, and thus far there has been no worth-while association of manufacturers, who could act as a clearing house for information, for the benefit of the membership, and for the betterment and stabilization of the industry as a whole."

The National Electrical Manufacturers Association and its predecessors have concentrated exclusively on building up an organization, and a physical mechanism to provide just such a clearing house and industrial laboratory as mentioned by Colonel Smith. This organization, including as it does all four branches of the electrical manufacturing industry—namely apparatus, appliance, radio and supply, offers a member the strength incident to its broad scope and large representative membership, as well as the opportunity for contact and exchange of experience with these other groups. This is especially important in an industry whose various branches are so dependent and closely related as are ours. While he is thus permitted a broad picture of the whole industry, at the same time, a member, through affiliation with his own product group, may exercise complete control over matters and problems which are peculiar to that group. Development of manufacturing, and performance standards, collection of industry statistics, elimination of sub-standard material, development of codes, and the promotion of ordinances to bring about their enforcement are of this class.

Policies Division Composed of Leading Executives

While preserving his identity as an individual manufacturer, and as a member of his product group, a member also has a voice in general industrial matters such as business policies and trade practices through his membership in the Policies Division—a group composed of leading executives in all four branches of the industry. This division has made progress and productive investigation in time-payment plans, cash discounts, bids on closed transactions, and other phases of trade practice, and has recently endorsed and adopted a Code of Business Ethics.

Colonel Smith indicates that among the problems facing the refrigerator manufacturer are the need for information on results of laboratory tests, the need for industry statistics, the question of service-policy, need for public education on the value and proper care of the electric refrigerator, and market extension.

"There has not been thus far the co-operation either between engineers or between companies, which would permit of an exchange of information that would result in adequate progress for the industry as a whole," Colonel Smith observes.

Prepared to Handle Legislative and Inter-Industry Problems

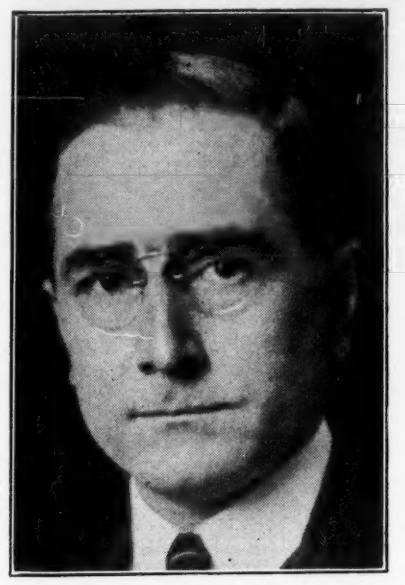
It is in just such matters as those listed above, as well as many other progressive industry activities, where National Electrical Manufacturers' Association offers the opportunity for exchange of information, and for analysis and dissemination of that knowledge through the Policies Division, and an able headquarters staff located in New York City. One of its most important functions is to appear in behalf of its membership before governmental and legislative bodies; another is to handle inter-industry matters with the N. E. L. A. and other organized branches of the industry.

At the present writing, production and other statistics on more than 100 different items are being collected for nineteen product groups, such as the electric refrigeration group might become.

Competition between companies is dissipating their resources when the same time and money devoted to the co-operative building up of the business would so strengthen the industry that it would be in a position to get a larger share of the consumer's dollar in competition with other industries which are now ahead of the electrical appliance manufacturers in the race of industry selling. That is why the N. E. M. A. established the Appliance Division, where all these different groups of manufacturers, with a common market and similar distribution problems could co-operatively build the business for each other and sell the public on the need for completely electrified homes.

An engineer who has designed and tested a refrigerator, in whose performance he has confidence, knows that it will preserve a quart of milk as easily as a piece of beef. Nor would he design another refrigerator to take care of a dozen eggs. Similarly, the N. E. M. A. is the result of twenty years' experience in developing an association to meet the needs of electrical and allied manufacturers and it can serve the Electric Refrigeration group as effectively as it now serves forty-two other groups covering products all the way from furnaces and radio to ranges.

(NOTE: See page 4 for list of officers and members of the National Electrical Manufacturers Association.)



Alfred E. Waller

Electric Management and Engineering Corp. Reports 1927 Sales Total of 1815 Units

Electric Management and Engineering Corp., 57 Williams St., New York City, reports that the total refrigerator sales made by its various operating companies for the year 1927 were 1815.

Ferro Enamel Will Give Enamelers Training Course in July

The Ferro Enamel Supply Co., 2100 B. F. Keith building, Cleveland, Ohio, will give an enamelers training course in Cleveland, July 9 to 23. Those who are interested in taking this course should get in touch with the Ferro Company at the address given.

WHAT IS THE N.E.M.A.?

Membership of National Association Includes Leading Manufacturers of Electrical Apparatus, Supplies, Appliances and Radio

IMMEDIATELY following the issuance of a general invitation to manufacturers of electric refrigeration equipment signed by Alfred E. Waller, managing director of the National Manufacturers Association, requesting the attendance of executives at a meeting to be held at the Detroit Athletic Club, Wednesday morning, May 9, a number of inquiries were received by ELECTRIC REFRIGERATION NEWS requesting detailed information regarding the N. E. M. A. and its membership. For the benefit of readers who may not be acquainted with the Association, the NEWS gives herewith a complete list of the officers and members of the Association.

Officers 1927-1928

Gerard Swope, president.
R. H. Goodwillie, treasurer.
Clarence L. Collens, vice-president, Policies Division.
J. M. Curtin, vice-president, Apparatus Division.
D. H. Murphy, vice-president, Supply Division.
Louis B. F. Raycroft, vice-president, Radio Division.
Alfred E. Waller, managing director.
S. N. Clarkson, assistant director.
Francis E. Neagle, counsel.

Board of Governors

(Terms Expire 1928)

T. E. Barnum, C. A. Bates, I. A. Bennett, Clarence L. Collens, H. B. Crouse, J. M. Curtin, B. B. Dinsmore, Otto H. Falk, J. F. Kerlin, D. H. Murphy, H. C. Petty, Louis B. F. Raycroft, R. J. Russell, A. H. Timmerman.

(Terms Expire 1929)

D. R. Bullen, H. T. Dyett, E. M. Herr, S. L. Nicholson, B. E. Salisbury, C. H. Strawbridge, Gerard Swope, M. O. Troy, N. A. Wolcott.

(Terms Expire 1930)

Louis Allis, R. H. Goodwillie, M. C. Rypinski, David Sarnoff, J. H. Trumbull, J. P. Wright, Fay Woodmansee, H. W. Young.

Members

Acme Apparatus Co.
Acme Wire Co.
Frank Adam Electric Co.
Adapti Mfg. Co.
Alden Mfg. Co.
Allen-Bradley Co.
The Louis Allis Co.
Allis-Chalmers Mfg. Co.
Alphaduct Co., Inc.
American Circular Loom Co.
American Copper Products Corp.
American Electrical Heater Co.
American Electrical Works.
American Insulated Wire Corp.
American Insulator Corp.
American Metal Moulding Co.
American Transformer Co.
Amplion Corp. of America.
Anaconda Copper Mining Co.
Albert & J. M. Anderson Mfg. Co.
C. J. Anderson & Co.
Appleton Electric Co.
The Armstrong Mfg. Co.
Arcturus Radio Co.
The Arrow Electric Co.
Arrow Flexible Conduit Co., Inc.
Atwater Kent Mfg. Co.
The M. B. Austin Co.
Auth Electrical Specialty Co.
Autocall Co.
Automatic Reclosing Circuit Breaker Co.
Barble-Card Electric Co.
Barkelew Electric Mfg. Co.
Beaver Machine & Tool Co., Inc.
Belden Mfg. Co.
Benjamin Electric Mfg. Co.
Bishop Wire & Cable Corp.
Bodine Electric Co.
Bonnell Electric Mfg. Co.
Boston Insulated Wire & Cable Co.
L. S. Brach Mfg. Co.
Bremer-Tully Mfg. Co.
The Bryant Electric Co.
Bulldoy Electric Products Co.
Burgess Battery Co.
Burke Electric Co.
Bussmann Mfg. Co.
Campbell Fibre Co.
The Carey Ohio Porcelain Co.
Central Tube Co.
Century Electric Co.
Chandeysson Electric Co.
The Chase-Shawmut Co.
Chelton Electric Co.
Chicago Fuse Mfg. Co.
Circle F Mfg. Co.
Jas. Clark Controller Co.
Collyer Insulated Wire Co.
The Colonial Insulator Co.
Colt's Patent Fire Arms Mfg. Co.
Columbia Metal Box Co.
Columbia Metal Hose Works, Inc.
Condit Electrical Mfg. Corp.
Connecticut Electric Mfg. Co.
Connecticut Telephone & Electric Co., Inc.
The Continental Fibre Co.
The Cook Pottery Co.
Cooper-Hewitt Electric Co.
S. H. Couch Co., Inc.
Crescent Ins. Wire & Cable Co.
Cribben & Sexton Co.
Crocker-Wheeler Electric Mfg. Co.
The Crosley Radio Corp.
Crouse-Hinds Co.
The Cutler-Hammer Mfg. Co.
The Cutter Electrical & Mfg. Co.
Davis-Jones Insulated Wire Co.
Day-Fan Electric Co.
Delaware Hard Fibre Co.
Philadelphia Storage Battery Co.
Pittsburgh Transformer Co.
Delta-Star Electric Co.
Detroit Insulated Wire Co.
Tobe Deutschmann Co.
Diamond Braiding Mills.
Diamond State Fibre Co.
Dictograph Products Corp.
Diehl Mfg. Co.
The Domestic Electric Co.
Drew Electric & Mfg. Co.
Driver-Harris Co.
Dubilier Condenser Corp.
Duncan Electric Mfg. Co.
Durham & Co., Inc.
Eastern Tube & Tool Co., Inc.
H. H. Eby Mfg. Co.
Economy Fuse & Mfg. Co.
Edison Electric Appliance Co., Inc.
Edwards & Co., Inc.
Electric Arc Cutting & Welding Co.
Electric Conduits Co.
Electric Controller & Mfg. Co.
Electric Machinery Mfg. Co.
Electric Power Equipment Corp.
Electric Railway Equipment Co.
Electric Service Supplies Co.
Electric Storage Battery Co.
Electrical Development & Machine Co.
Electrical Engineers Equipments Co.
Electro Dynamic Co.
Electro-Magnetic Tool Co.
Emerson Electric Mfg. Co., Inc.
Enameled Metals Co.
Estate Stove Co.
Fansteel Products Co., Inc.
Federal-Brandes, Inc.
Federal Electric Co.
Federal Porcelain Co.
Federal Telephone Mfg. Corp.
Fibroc Insulation Co.
Findlay Electric Porcelain Co.
Fitzgerald Mfg. Co.
Forest Electric Co., Inc.
Formica Insulation Co.
S. R. Fralick & Co.
Freed-Eisemann Radio Corp.
French Battery Co.
Garfield Mfg. Co.
Garland Mfg. Co.
General Electric Co.
General Porcelain Co.
Goodman Mfg. Co.
General Radio Co.
Goodyear Rubber Insulating Co.
Gould Storage Battery Co., Inc.
Graybar Electric Co., Inc.
A. H. Grebe & Co., Inc.
Habirshaw Cable & Wire Corp.
Hart & Hegeman Mfg. Co.
Hart Mfg. Co.
The Hartford Faience Co.
Harvey Hubbell, Inc.
Hatfield Rubber Works, Inc.
Hazard Mfg. Co.
Hazeltine Corp.
The Holtzer-Cabot Electric Co.
Howell Electric Motors Co.
Hunter Fan & Motor Co.
The Ideal Electric & Mfg. Co.
Illinois Electric Porcelain Co.
Imperial Electric Co.
Imperial Porcelain Works.
Indiana Rubber & Insulated Wire Co.
Industrial Controller Co.
The Iten Fibre Co.
Jeannin Electric Co.
Jeffrey Mfg. Co.
Jewell Electrical Instrument Co.
Johns-Manville Corp.
Kellogg Switchboard & Supply Co.
Kerite Insulated Wire & Cable Co.
Kimble Porcelain Corp.
Knox Porcelain Corp.
Kuhlman Electric Co.
Landers, Frary & Clark.
The Lincoln Electric Co.
A. J. Lindemann & Hoverson Co.
Louis J. Loeffler.
W. J. Loth Store Co., Inc.
Lowell Insulated Wire Co.
The Macallen Co.
Malleable Iron Range Co.
Mancha Storage Battery Locomotive Co.
Manning, Bowman & Co.
Marion Insulated Wire & Rubber Co.
Master Electric Co.
McGill Mfg. Co.
Memco Engineering & Mfg. Co., Inc.
Metal Ware Corp.
Miller Co., Ivanhoe Division.
Mitchell-Rand Mfg. Co.
Mogadore Insulator Co.
Mohawk Conduit Co., Inc.
Moloney Electric Co.
Monitor Controller Co.
Morgan-Gardner Electric Co.
Wm. J. Murdock Co.
National Carbon Co.
National Metal Molding Co.
National Porcelain Co.
National Screw & Mfg. Co.
National Vulcanized Fibre Co.
New England Wire Co.
New York Insulated Wire Co.
Northern Electric Co., Ltd.
Northwestern Mfg. Co.
Ohio Brass Co.
Ohio Electric & Controller Co.
The Okonite Co.
W. R. Ostrander Electric Works, Inc.
Otis Elevator Co.
Overbagh & Ayers Mfg. Co.
Pacent Electric Co., Inc.
Pacific Electric Mfg. Co.
The Packard Electric Co.
The Palmer Electric & Mfg. Co.
Partrick & Wilkins Co.
Pass & Seymour, Inc.
The Peerless Electric Co.
The Peninsular Store Co.
Pfanstiehl Radio Co.
The Pratt Chuck Co.
The Pringle Electrical Mfg. Co.
Radio Corp. of America.
Railway & Industrial Engineering Co.
The Rattan Mfg. Co.
Raytheon Mfg. Co.
The Reliance Electric & Engineering Co.
Ren-Rad Corp., Inc.
Ridgway Dynamo & Engine Works of the Elliott Co.
Roach-Appleton Mfg. Co.
Robbins & Meyers Co.
Robeson Rochester Corp.
Rockbestos Products Corp.
Rogers Fibre Co.
Roller-Smith Co.
Ross Wire Co.
Rome Wire Co.
Roth Bros. & Co.
Rowan Controller Co.
Russell Electric Co.
Rutenber Electric Co.
Safety Cable Co.
Sangamo Electric Co.
Saylor Electric & Mfg. Co.
Schweitzer & Conrad, Inc.
Signal Electric Co.
Signal Engineering & Mfg. Co.
Simplex Electric Heating Co.
Simplex Wire and Cable Co.
Spaulding Fibre Co., Inc.
Square-D Co.
Standard Gas Equipment Corp.
Standard Underground Cable Co.
Stanley & Patterson, Inc.
The Star Porcelain Co.
Steel City Electric Co.
The Steelduct Co.
Sterling Mfg. Co.
Stromberg-Carlson Telephone Mfg. Co.
B. F. Sturtevant Co.
Sundh Electric Co., Inc.
Thomas & Betts Co.
The R. Thomas & Sons Co.
Trebor Mfg. Co.
Triangle Conduit Co., Inc.
The Triumph Electric Corp.
Trumbull Electric Mfg. Co.
The Trumbull-Vanderpoel Elec. Mfg. Co., Inc.
Tubular Woven Fabric Co.
Union Electric Mfg. Co.
United Metal Box Co.
U. S. Electrical Mfg. Co.
United States Rubber Co., Wire Division.
Valley Electric Co.
Vulcan Iron Works.
V V Fittings Co.
The Wadsworth Elec. Mfg. Co., Inc.
Wagner Electric Corp.
Walker & Pratt Mfg. Co.
Ward Leonard Electric Co.
Weber Electric Co.
Westinghouse Electric & Mfg. Co.
Weston Electrical Instrument Corp.
Wheeler Insulated Wire Co.
J. M. White.
Willard Storage Battery Co.
Wilmington Fibre Specialty Co.
Wilson Welder & Metals Co., Inc.
Wireless Specialty Apparatus Co.
The Wiremold Co.
Wirt Company.
The Frank E. Wolcott Mfg. Co.
The S. A. Woods Machine Co.
Worcester Elec. & Mfg. Co.
Wm. Wurdack Elec. Mfg. Co.
The Youngstown Sheet & Tube Co.
Zobell Electric Motor Corp.

REVISED CODE NOT YET SUBMITTED TO OHIO COMMISSION

Tentative Code Indicates Attitude of the Committee.

As reported in the previous issue, a resolution has been transmitted to the Industrial Commission of Ohio at Columbus, Ohio, by the newly organized Automatic Refrigeration Association, requesting that action regarding the proposed refrigerating safety code be held in abeyance until the final adoption of the national code by the Engineering Standards Committee. At a meeting with Thomas P. Kearns, superintendent of the division of Safety and Hygiene of the Industrial Commission of Ohio, and members of the Committee which has in charge the drafting of the safety code on high and low pressure piping, including refrigeration, which was held in Columbus, on April 9, representatives of several manufacturers of refrigerating equipment presented their claims in favor of certain changes in the proposed code. A demonstration of the multiple system was staged by the Frigidaire Corporation representatives at this time.

The Industrial Commission of Ohio consists of P. F. Casey, chairman, Thomas M. Gregory, Wellington T. Leonard and Herman R. Witter, secretary. Section 4 of the revised tentative code of safety rules and regulations governing the installation of pressure piping, published under date of March 7, 1928, deals with the "Ohio Refrigerating Safety Code—revision as of February, 1928" is as follows.

General

1. The requirements of Section IV shall apply to every refrigerating system and is intended to provide for the safe installation, operation and inspection of same. The purpose being to provide reasonable safety for life, health and property.

2. It is understood that existing safety regulations as prescribed for welding, building, stairways, exits, belts, moving machinery, steam and electric uses, and anything in such plants not specifically covered by this code, are covered by their respective rules and regulations in refrigerating systems as fully as if specified in this code.

Definitions

3. *Public Buildings:* Business Buildings and Residence Buildings: Buildings as so defined by Statute, Ordinance or Code.

4. *Container:* A cylinder for the transportation of refrigerants constructed to conform to the regulations of the Interstate Commerce Commission.

5. *Fusible Plug:* A device having a predetermined temperature fusible member for the relief of pressure.

6. *Liquid Receiver:* A vessel permanently connected to the high pressure side of a system by inlet and outlet pipes for the storage of refrigerant.

7. *Pressure Imposing Element:* That part of a refrigerating system which draws the refrigerant from the low pressure and discharges it into the high pressure side of the system, such as compressor or absorber and generator.

8. *Pressure Limiting Device:* A pressure or temperature responsive mechanism for automatically stopping the operation of the pressure imposing element.

9. *Pressure Relief Device:* A pressure relief valve, a rupture member, a fusible plug or other approved device for relieving the pressure.

10. *Pressure Relief Valve:* A valve held shut by a spring or other means to automatically relieve pressure in excess of its setting.

11. *Refrigerant* is the chemical agent used to produce refrigeration.

12. *Noxious Refrigerant* for the purposes of this Code is any refrigerant which when breathed is harmful, pernicious.

13. *Flammable Refrigerant,* for the purposes of this Code: Any refrigerant which will burn or explode when mixed with air.

14. *Adopted Refrigerant Pressure* is that which corresponds to a saturation temperature of the refrigerant of 86 degrees Fahr. (30 degrees C.).

15. *Refrigerating System:* A combination of apparatus in which a refrigerant is circulated for the purpose of extracting heat.

16. *Refrigerating Machinery Room:* One in which is located any pressure imposing element, condenser, receiver, or shell type apparatus.

17. *Direct Refrigeration:* A system in which a non-flammable liquid cooled by the refrigerant is circulated to the material or space refrigerated.

19. *Rupture Member:* A device that will automatically rupture at predetermined pressure.

20. *Factor of Safety:* The multiplier four (4) which multiplied by the test pressure, gives the probable repture pressure.

21. *Stop Valve:* A shut-off valve for use during normal operation.

22. *Test Pressure:* The maximum pressure at which safety devices for relief of pressure must function.

23. *Classification:* The class to which an installation belongs shall be determined by the combined weight of refrigerant contained in the condenser, receiver, all evaporators and all other parts of the system connected to a common pressure imposing element.

Class A is a refrigerating system containing one thousand pounds (1000 lbs.) of refrigerant or over.

Class B is a refrigerating system containing one hundred pounds (100 lbs.) and less than one thousand pounds (1000 lbs.) of refrigerant.

Class C is a refrigerating system containing twenty pounds (20 lbs.) and less than one hundred pounds (100 lbs.) of refrigerant.

Class D is a refrigerating system containing less than twenty pounds (20 lbs.) of refrigerant.

General Requirements for All Classes—24 to 42 Inclusive

24. The Seller shall furnish the Purchaser with a letter stating the name and the correct weight of refrigerant for the system when it is operated to full capacity most efficiently. This letter to be accessible to inspectors at all times.

25. The Seller shall give the Purchaser a certificate of test made showing the pressure to which the high and low sides were subjected and the date test was made. (See 41.) This certificate to be accessible to inspectors at all times.

26. Additions to or changes in a refrigerating system shall be subjected to test in accordance with 25 and 41.

27. Where Purchaser does own work of installing, the test is the same (see 25-26-41); the certificate is to be made and signed by party in charge of test.

28. Pressure relief valves, pressure limiting devices, fusible plugs and rupture members where required shall be made of suitable material for the refrigerant employed and shall be constructed and set to prevent the pressure exceeding the test pressure, and shall be legibly marked with the pressure at which they are set.

29. The size of relief valves shall be as follows:

Capacity of System	*CO/2 and Ethane* No.	Size	*Other Refrigerants* No.	Size
up to 1,000 lbs.	1	½"	1	½"
1,000 to 1,800 lbs.	1	½"	1	¾"
1,800 to 3,000 lbs.	1	½"	1	1"
3,000 to 5,250 lbs.	1	½"	1	1¼"
5,250 to 7,500 lbs.	1	¾"	1	1½"
7,500 to 13,500 lbs.	1	1"	1	2"
13,500 to 27,000 lbs.	.....		2	2"

30. Where rupture members are permitted the equivalent area of the relief valve specified shall be provided.

31. Fusible plug where permitted shall have a maximum fusing point of 280 degrees Fahr. The free opening shall be one-sixteenth inch in diameter (1/16").

32. No stop valve shall be located between a pressure relief device or pressure limiting device and the part of the system protected thereby, except that in the case of a liquid receiver, shell type liquid cooler and shell type condenser there shall be two (2) relief valves, both of which shall have a stop valve on the line leading to the relief valve, to permit of the removal of the relief valve in case of leakage, but the stop valves shall be so arranged that neither of the two stop valves can be closed unless the other is first opened.

33. Liquid refrigerant level gauge glasses, except those of the Bulls Eye type, shall have automatic closing shut-off valves and they should be adequately protected against injury by slotted metal casings.

34. All piping and liquid receivers shall be so installed as to be least liable to damage.

35. All pipe fittings and valves shall be those suitable for the refrigerant employed.

36. Containers shall be disconnected from the refrigerating system when not actually charging or withdrawing.

37. Withdrawal of refrigerant from the system shall be done in accordance with the regulations of Bureau of Explosives of Interstate Commerce Commission.

38. Every part of the refrigerating system, except control mechanism and gauges, shall be designed for test pressures as follows: For the more common refrigerants in accordance with table 42; for any refrigerant not shown in table 42 the test pressure for the high side shall be the product of the adopted refrigerant pressure (see 14) multiplied by 1.5 and for the low side shall be the adopted refrigerant pressure (see 14).

39. The factor of safety in all cases shall be not less than four (4). (See 20.)

(*Concluded on Page 6, Column 1*)

TWO DAY CONVENTION ATTENDED BY PACIFIC COAST KELVINATOR MEN

A two day sales convention was held in Seattle, Wash., in early April by the Kelvinator Corp. of Detroit. Executives and salesmen of the company in the states of Washington and Oregon gathered at the Olympic hotel, for the business sessions. At a banquet given by Henry W. Burritt, vice-president of the Kelvinator Corp., Wednesday, April 11, at the hotel, Mr. Burritt stated that the future of the industry was most promising in this section of the Pacific Coast, particularly.

Among those taking a leading part in the Seattle convention, along with Mr. Burritt, were William E. Day, district manager of the western territory, consisting of eleven states; E. R. Legg, who is in charge of the distribution in Seattle, heading the Kelvinator Radio Sales Corp. there; Thomas S. Edwards, the commercial representative for the western states; Carl Eastman, of the N. W. Ayer & Son advertising agency; George W. Moister, advertising and sales promotion manager of the corporation on the Coast; R. O. Wagner, assisting in arranging the window exhibits of the corporation which are made a special feature of its sales and store policy, and J. B. Nicholson, refrigeration representative.

Refrigeration Displays Popular at Seattle Electrical Show

Displays of electric refrigerators attracted much attention at the Spring electrical show held the week of March 26 in the Ranke building, Seattle, Wash. With the note of Spring being the predominate thought, all of the displays used flowers to add to their attractiveness. Six different makes of electric refrigerators were exhibited.

DISTRICT OF COLUMBIA DRAFTS CODE COVERING THE MULTIPLE SYSTEM

By C. Leslie McCrea

Early in the present year the Fire, Plumbing and Electrical authorities of the District of Columbia commenced an investigation of the methods of installation and the potential hazard in connection with the so-called Multiple Unit system of refrigeration for apartment houses.

The Plumbing Department, in particular, made a thorough inspection of a large number of multiple installations throughout the city, and carefully examined the various methods of piping employed. The Fire Department carefully checked up on the various calls of the Rescue Squad in connection with refrigerant leakages.

At the time that this subject was under serious consideration a typical accident occurred at a large apartment house in this city, as described in the *Washington Post* of February 22. The report of the Fire Rescue Squad, which was called out at 4 a. m., shows that pressure was developed in the mechanism, probably through leakage of air into the suction line, and the compressor head was lifted, allowing the refrigerant to escape.

Shortly thereafter, Maj. W. E. Covell, assistant Engineer Commissioner of the District of Columbia, sent out a proposed refrigerating machine regulation which was discussed at a public hearing on April 2. This public hearing was quite largely attended by representatives of the various companies, Frigidaire and Kelvinator being jointly represented.

After considerable discussion, in which L. S. Keilholtz, of the Frigidaire Corporation, took the position that there was no necessity for any regulation whatever on Multiple Unit systems to be installed in the District of Columbia, Maj. Covell offered the meeting the choice of a protracted public discussion or of submitting the question to a committee of engineers. This latter course was adopted and a committee, consisting of four representatives from the leading manufacturers, was appointed as follows: L. S. Keilholtz, chief engineer of the Frigidaire Corporation; C. C. Spreen, chief engineer of the Kelvinator Corporation; J. J. Donovan, General Electric Company, Cleveland, Ohio; E. T. Williams of the Servel Corporation. In addition, one representative from the builders and public, Rufus Lusk, president of the Operative Builders Association of Washington; L. V. Seib, fire marshal; W. B. Kern, assistant electrical engineer, and A. R. McGonegal, plumbing inspector of the District.

These members of the committee met at 2 p. m. on Monday, April 2, and after a long discussion agreed on a tentative regulation which was satisfactory to all present, for the purpose of meeting the emergency condition. This tentatively approved regulation is given in full below. It follows, to a great extent, the proposed regulation on which the public hearing was held. Certain additional engineering and installation requirements are understood to be under discussion and will probably be enacted in the near future.

REFRIGERATION SAFETY CODE TO BE CONSIDERED BY OHIO COMMISSION

(*Concluded from Page 5, Column 2*)

40. For refrigerants not shown in the table 42 the adopted refrigerant pressure (see 14) as well as the adaptability of the refrigerant shall be passed upon by the committee on Refrigeration Safety Codes, of the A. E. S. C.; in the absence of this authority for a refrigerant the use of such refrigerant is prohibited.

41. Every part of a refrigerating system, except control mechanism and gauges, shall be tested after being assembled to not less than the test pressures given in the table 42; for refrigerants not shown in the table 42 this test pressure shall be as provided for in 38.

42. Table of Test Pressures, and Noxious and Flammable Refrigerants:

Refrigerant (All pressures are gauge pressures.)	*Test Pressures* Low	High	*Noxious*	*Flammable*
Carbon Dioxide	1,000	1,500	no	no
Ethane	600	1,000	no	yes
Ammonia	150	250	yes	yes
Propane	140	225	no	yes
Methyl Chloride	90	150	no	yes
Sulphur Dioxide	60	110	yes	no
Iso-Buthane	50	80	no	yes
Buthane	30	40	no	yes
Ethyl Chloride	15	20	no	yes
Methylene Chloride	12	12	no	no
Acetylene Bichloride	12	12	no	yes

Special Class A Requirements—23 to 42 Inclusive

43. Where noxious refrigerants are used at least two (2) helmets or masks, tested in accordance with the requirements of the United States Bureau of Mines for such gas, shall be kept in operative condition and be placed easily accessible from outside the machinery room. Operators of plant shall be trained in their use.

44. Every refrigerating system shall have a pressure limiting device (see 8-32) to function at 90% of the pressure at which high side relief devices are set. (See 28.)

45. Every refrigerating system shall be provided with one or more pressure relief devices of proper size (see 28-29) connected between each main discharge stop valve and the pressure imposing element; also on each liquid receiver and shell type condenser located at the top (see 32), discharging either to the atmosphere (see 47) or into the low pressure side.

46. Every refrigerating system shall be provided with a pressure relief device on the *low pressure side* discharging to the atmosphere (see 47), this relief device to be located on the main suction line between evaporators and main suction stop valve at pressure imposing element.

47. Where a noxious and/or flammable refrigerant is used the discharge from the high side relief valves when not discharging into the low pressure side (see 45) shall be conducted to the outside atmosphere to not less than 12' above grade. The area of the discharge pipe shall be not less than the combined area of the various relief devices connected thereto; the outlet shall be turned downward.

48. Every refrigerating system using electrical equipment in the machinery room (see 16) shall have a control switch located outside the machinery room where it can be easily reached in case of emergency.

49. Every refrigerating system, where the discharge pressure can exceed (50) fifty pounds, shall have a check valve placed in the discharge line between each pressure imposing element, before same enters either an oil trap, a main discharge line from other units or the condenser.

50. Refrigerating machinery room in which a flammable refrigerant is used shall not have any fire, flame or arc light.

51. Every machinery room shall be provided with adequate means of ventilation; if a mechanical system of ventilation is used it shall be so arranged that it may be started from outside the machinery room (see 2-16).

Limitations as to Use—52 to 55 Inclusive

52. Installations in Public Buildings (see 3) as/and Theaters, Motion Picture Theaters, Exhibition Halls, Assembly Halls, Hospitals, Asylums, Hotels, Apartment Houses, Dance Halls, Court Houses, Police Stations, Jails, Passenger Stations of Transportation Companies, Schools and Churches and any and all places where people congregate or sleep, shall be designed to use the indirect method of refrigeration (see 18) outside the machinery room.

53. Where a noxious or flammable refrigerant is used in installations as set forth in 52, the machinery room shall have no openings into other parts of the building and shall be entered and ventilated from the outside only.

54. Refrigerating systems using a noxious or flammable refrigerant and employing the direct method of refrigeration (see 17) are restricted to the first floor and basement of business buildings, combination business and residence buildings and to the space occupied by a single tenant, unless used exclusively for ice making and/or refrigeration and/or chemical purposes.

55. Where a noxious or flammable refrigerant is used elevator shafts and stair wells extending into that portion of the building used as a refrigerating machinery room shall be enclosed with air-tight walls, access through which shall be by a single tight-fitting door which shall be kept tightly closed except when passing through same.

Operating Precautions—56 to 60 Inclusive

56. The compressor should be protected against slugs of liquid by proper arrangement of trap or accumulator on suction line with suitable arrangement for the return of the entrapped liquid to the working system.

57. Tightening of bolts or flanged joints when under pressure should be avoided.

58. In testing with air pressure care should be taken to prevent the temperature at any point rising above one hundred and thirty (130) degrees Fahr.

59. The following items should be posted in a conspicuous place; the names and addresses with phone numbers of the engineers or operators and the physician to call in case of emergency; and the location of the nearest fire alarm box.

60. Containers before charging should be kept in a cool place.

Class B Requirements—23 to 42 inclusive, and

61. Helmets or masks same as 43, except only one required.
62. Pressure limiting device same as 44.
63. Pressure relief devices same as 45-46.
64. Discharge of relief devices same as 47 or see 70 for modification.
65. Remote control same as 48.
66. Fires and lights same as 50.
67. Ventilation same as 51.
68. Limitations as to use same as 52 to 55 inclusive.
69. Operating precautions same as 56 to 60 inclusive.
70. Where ammonia is the refrigerant the discharge of relief devices (see 64) may be into a suitable body of water, which shall be used for no other purpose except ammonia absorption. At least one (1) gallon of fresh water shall be provided for every pound of ammonia in the system (see 24). The water used shall be protected from freezing without the use of salt or chemicals. For other noxious or flammable refrigerants the discharge may be into a suitable body of non-flammable absorbent, provided that this absorbent and method of use shall have been first passed upon by the committee on Refrigeration Safety Codes of the A. E. S. C.

Class C Requirements—23 to 42 inclusive, and

71. Helmets or masks same as 61.
72. Pressure limiting device same as 44.
73. Pressure relief devices same as 45-46-47.
74. Ventilation same as 51.
75. Limitations as to use same as 52 to 55 inclusive.
76. Operating precautions same as 56 to 60 inclusive.

Class D Requirements—23 to 42 inclusive, and

77. Pressure limiting device same as 44 except where air cooled condensers are used may be omitted.
78. Pressure relief devices same as 45-46 or fusible plug (see 5-31).

Proposed Code of District of Columbia Regulating Direct Multiple Refrigerating Systems

No direct multiple refrigerating system, any part of which is located above the first story in a building used or intended to be used in whole or in part for residential purposes, shall be installed in the District of Columbia without a permit therefor and inspection and approval by the Plumbing and Electrical Departments, D. C., before use.

A direct multiple refrigerating system is a direct system in which two or more evaporators are connected to a pressure imposing element. Direct refrigeration is a system in which the refrigerant is circulated to the substance or space refrigerated.

All connections, alterations or additions to electric wiring systems and all plumbing or gas fitting incidental to the refrigerating system shall be made in accordance with the regulations applicable thereto. Plumbing and gas fitting work shall be done by a licensed master plumber and gas fitter.

All parts of such refrigerating systems including connections between machines and units, shall bear the approval of the Underwriters' Laboratories, Inc., or such other national representative body as may be approved.

All connections between refrigerating machines and refrigerating units attached thereto shall be made by seamless drawn copper tubing of not less weight than standard iron pipe gauge, and extra heavy recessed sleeve pattern cast or forged non-ferrous fittings with each screw thread brazed or sweated in place; or standard ammonia piping construction; or seamless drawn copper tubing of not less than 25/1000 of an inch wall thickness, which may be used with S. A. E. tool flared joints or equal, provided the tubing is enclosed in a standard Underwriter's rigid or flexible conduit, and all valves or connections are enclosed in steel junction and valve boxes and all openings to living quarters are sealed. In all cases where units on two or more floors are connected to the same riser lines, the conduit shall extend above the last tubing connection box in rigid conduit and shall terminate above the roof with a suitable ventilating device.

Tentatively approved, April 2, 1928.

WM. E. R. COVELL,
Major, Corps of Engineers, U. S. Army,
Assistant Engineer Commissioner, D. C.

Kelvinator Programs Broadcast By Seattle Representative

Impetus to the sale of Kelvinators in Seattle is given by the broadcasting station which is owned and conducted by the Kelvinator-Radio Sales Corporation at Fifth avenue and Seneca streets, Seattle. Its station, KRSC, is said to be a favorite one with the fans, inasmuch as considerable entertainment is provided of a widely diverse nature.

Haskelite Manufacturing Corp. Moves

Haskelite Mfg. Corp. announces the removal of their general offices from 133 West Washington St. to 120 South LaSalle, State Bank Bldg., Chicago. Ill., effective April 21.

In writing to advertisers please mention ELECTRIC REFRIGERATION NEWS.

A local assembly plant for PLYMETL Refrigerator Cabinets offers . . . .

1. *Attractive profits to the operator*

The PLYMETL cabinet is unique because it is the only one adapted to local assembly. The panels are cut to size, grooved, rabbitted, and fitted with door frames at the factory. They are shipped flat to the local assembly plant, thereby saving from $6 to $26 on each refrigerator.

The cabinet can be used with any type of refrigerator unit. A local assembly plant can therefore market its entire output locally in co-operation with distributors of electric units.

A PLYMETL assembly plant requires only a small investment. The cost of equipment varies from $5,000 to $10,000, depending on the size of the proposed output. The total working capital, including this investment, would only be from $15,000 to $30,000. A small amount of floor space and a very small organization can handle the work. Wherever an output of three or more boxes can be taken as a basis of figuring, the return will be unusually large for the small capital and effort required. An equipment costing $10,000 can produce upwards of $1,000,000 worth of cabinets yearly.

This opportunity is not limited to the big metropolitan centers. The additional unit cost of assembling PLYMETL refrigerators in a plant handling only three boxes a day over one handling 50 a day is so small that it can be disregarded.

We have detailed data covering the layout of an assembly plant, the equipment needed, the organization for handling sales and assembly, etc. We will gladly put this information in your hands if you are interested in forming a local company to meet this need for better refrigeration cabinets at a fair price.

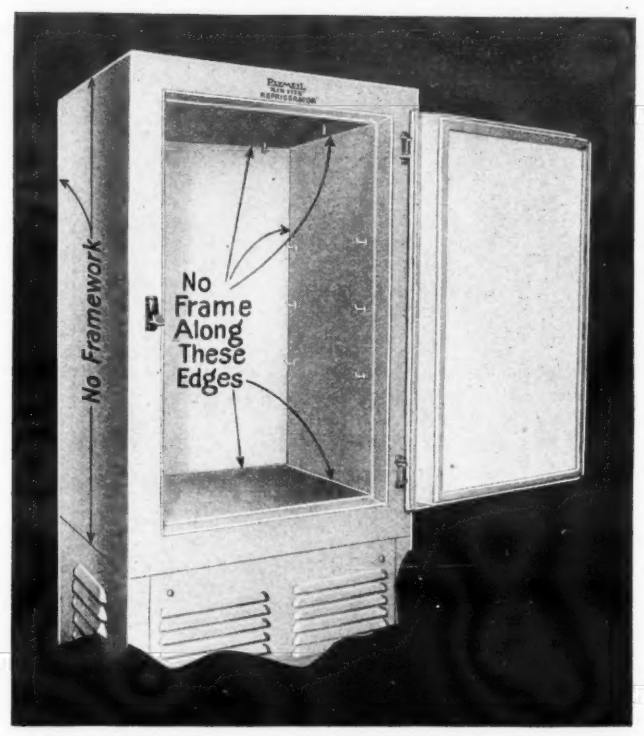
Companies are being formed to operate such plants in many cities. Many other territories are still open. Write now for full information.

2. *An added sales help to the distributor*

Distributors find several distinct advantages in dealing with local PLYMETL assembly plants.

First, the PLYMETL cabinet sets a new standard of insulating efficiency in household equipment. The long life and high quality of this cabinet can be used to good advantage in closing sales.

Second, by using the locally assembled PLYMETL box, the distributor is saved the



trouble and cost of maintaining a stock of cabinets, touching up boxes damaged in shipment, etc.

Third, the local source of supply insures prompt delivery with better control over the details of finishing. The local plant can finish every box to order, in any desired color scheme at practically no additional cost. With the increasing demand for individual color treatment in the home, this gives the PLYMETL box a big sales advantage in addition to its superior construction features.

3. *A superior construction to the user*

The PLYMETL refrigerator cabinet can be used with any type of electric cooling unit. It represents a standard of insulating efficiency never before equalled in a box of its price.

The use of PLYMETL as a shell makes possible the elimination of corner posts and the complete sealing of the exterior of the box, two features which represent radical improvements in cabinet design. No air can enter the insulating space and cause condensation. No metal trim is needed since there are no joints to hide.

The insulating medium is monolithic cork with no joints or breaks to allow heat to penetrate. This cork is mixed by a special process developed by this company and made available to our assembly plants.

The doors are covered with steel on both faces with the edges turned up, overlapped and soldered, making a hermetically tight seal. The strength and stiffness of the steel faced plywood in these doors eliminates warping, thereby insuring a tight fit not only when the door is new, but throughout the life of the cabinet.

A vitrolite lining—better than marble—is used in the PLYMETL box—the highest grade of refrigerator lining known. In the past it has been applied only to large, high priced refrigerators.

A box with the superior quality of the PLYMETL refrigerator could be sold at a great advance in price over ordinary refrigerator cabinet construction. But on account of the great savings effected by local assembly, it can compete in price with inferior boxes and still show the assembly plant an attractive profit.

Geo. R. Meyercord, President

Haskelite Manufacturing Corporation

120 So. LaSalle Street

Chicago, Illinois

PLYWOOD HASKELITE PLYMETL

PLYWOOD HASKELITE PLYMETL

ERN-4-25-Gray

ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Electric Refrigeration Industry

PUBLISHED EVERY TWO WEEKS BY

BUSINESS NEWS PUBLISHING CO.

554 Maccabees Building, Woodward Avenue and Putnam Street
Detroit, Michigan. Telephones: Northway 4243-4244

Subscription Price—Effective April 1, 1928
United States and Possessions: $1.50 per year; three years for $3.00.
All Other Countries: $1.75 per year; two years for $3.00.

F. M. COCKRELL, *Editor and Publisher*
H. A. DELASHMUTT, *Advertising Manager* BEULAH WERTZ, *Circulation Manager*
HUGH J. MOORE, *Assistant Editor* GEORGE N. CONGDON, *Business Manager*

APRIL 25, 1928

Selling Short

Arthur Brisbane is credited with having originated the statement that "The man who sells America short is a damn fool." The phenomenal expansion of American industry bears witness to the truth of this profound observation.

There is no denying, of course, that money can be made on the short side of the market. Opportunists of all classes find innumerable situations which permit the squeezing of a profit from the mistakes of others. Traders, in general, may be divided into two broad classes—those who seek to profit by *building up,* and those who salvage their reward by *tearing down.* Most business men adopt one method or the other. It is a shrewd individual indeed who can play the game both ways and win.

Those who would moralize regarding the two types of business activity are confronted with convincing arguments that destructive action has its place in the scheme of things. Those who daily witness the wrecking of numerous old buildings to make way for a new and greater edifice have a demonstration of the economic service thus rendered. When, as occasionally happens, a comparatively new and servicable building is sacrificed, there may be expressions of doubt as to the complete economic justification of the process.

Applying the thought to competitive business, there are men who will argue (usually in whispers) that the destruction of the other fellow's business, the thwarting of his plans or the limitation of his activities, are necessary, not only for their own well being, but for the general good. Much support may be gained for such a theory if the objective of the attack is of questionable character, dishonest or ruthless in his methods. There are times, it seems, when the act of stopping a questionable enterprise becomes a virtue.

The fact remains, however, that many business men become so concerned with the job of placing obstacles in the paths of their competitors that they lose sight of many valuable opportunities to promote their own business constructively. In protecting one's business—building a fence around it, so to speak, the danger is in erecting a barricade which will keep out *customers* quite as effectively as competitors. Due to shortsightedness the fence may surround so small an area that it is easier to go around it than to break through.

One of the most peculiar manifestations of this attitude is the active effort made by some manufacturers to prevent the popularizing of their own product. An interesting example of this kind of thinking is the resolution of the National Association of Ice Cream Manufacturers (printed in an adjoining column) recommending that manufacturers of electrically refrigerated equipment *"refrain from encouraging* the home manufacture of ice cream."

It is quite obvious, of course, that this action was based on the theory that the interests of the ice cream manufacturers will be affected adversely if the housewife learns to make ice cream at home instead of purchasing it from the retailer. The question arises as to whether the concoction of a given quantity of home-made ice cream necessarily means that the retail dealer's sales are decreased to that extent.

More important is the question as to whether it really is to the best interests of the ice cream manufacturers to *suppress the mention of their product* in the millions of dollars worth of advertising which are doing so much to sell the public on the value of cold foods and the deliciousness of frozen desserts, or to prevent the younger generation from learning the delights of ice cream through the medium of mother's handiwork in the great American kitchen.

In brief, we believe that the ice cream industry is selling its own business "short" by writing itself out of the picture of the popular household electric refrigerator. The manufacturers of electric machines have readily complied with the request on the principle that "the customer is always right." We venture to suggest, however, that the ice cream people will profit more by taking the "long" side of the market.

Kelvinator Corp. of Pasadena in New Home

Modern Refrigeration Has Its Niche In New 27 Story Apartment Building

The photograph reproduced above is of a typical kitchenette arrangement in the building in New York City, known as Number One Fifth Avenue, shown in the insert. H. L. Downey, of the Copeland Refrigeration Co., of New York, Inc., received the order for an installation of 100 self-contained units.

ASSOCIATION OBJECTS TO ENCOURAGEMENT OF HOME MADE ICE CREAM

Members Criticize the News for Printing Recipe

NATIONAL ASSOCIATION OF
ICE CREAM MANUFACTURERS
Office of the Executive Secretary
HARRISBURG, PA.

April 11, 1928.

ELECTRIC REFRIGERATION NEWS,
Detroit, Michigan.

You would possibly be somewhat surprised to know that a good many of the members of the International Association of Ice Cream Manufacturers have sent in copies of your March 14 issue, with expressions of concern regarding the article on the first page concerning the home making of ice cream in a Servel refrigerator.

As you know, ice cream manufacturers have invested a great deal of money in electric refrigerators for equipment of their dealers' stores.

Because of this fact, they were concerned, two or three years ago, when electric refrigerator companies began to suggest to the public that they make their own ice cream in electric refrigerators. As a result of this, the attached resolution was passed by a meeting of the Board of Directors of the International Association of Ice Cream Manufacturers on May 31, 1926, and sent by this office, at their request, to most of the larger manufacturers of electric refrigerators.

The response from these electric refrigerator manufacturers showed their understanding and desire to comply with the spirit of this resolution.

We recall that, at that time, the advertising of Electric Refrigerator Corp. was inviting the public to write for a book of recipes showing how to make ice cream. A letter from their sales and advertising manager, acknowledging receipt of this resolution, stated that out of consideration for the ice cream manufacturers' attitude toward this practice, they were discontinuing it immediately, which they did.

With this information, you can see how ice cream manufacturers who saw your issue of March 14 were concerned to feel that this appeal was being stressed again by a company as aggressive in its merchandising activity as Servel.

We though you would appreciate our telling you of this reaction on the part of so many members of our Association.

Yours very truly,
National Assn. of Ice Cream Mfrs.,
Fred Rasmussen, Executive Secretary.

Resolution

WHEREAS, the National Association of Ice Cream Manufacturers are entering the nation-wide advertising campaign for the promotion of the sale of ice cream; and

WHEREAS, the Ice Cream Manufacturers are spending enormous amounts of money with the manufacturers of electrically refrigerated equipment;

WHEREAS, it is of mutual interest to both the Ice Cream Manufacturers and the manufacturers of electrically refrigerated equipment that the Ice Cream Industry be advanced and protected;

BE IT RESOLVED, that the Board of Directors of the National Association of Ice Cream Manufacturers recommend that the manufacturers of electrically refrigerated equipment refrain from encouraging the home manufacture of ice cream; and

BE IT FURTHER RESOLVED, that it be recommended that the manufacturers of electrically refrigerated equipment provide a suitable compartment for carrying ice cream and as a co-operative suggestion so label and advertise the same.

Mystic Company In Production

The Mystic Iceless Refrigerator Co., recently established at Spokane, Wash., has commenced the manufacture of electric refrigerators in its new plant.

TELLS DEALERS TO FOLLOW PLAN OUTLINED IN THE NEWS

M. H. MOISE COMPANY
Moise Building—220 E. Main St.
Distributors
Electrical Appliances
Lexington, Ky.

April 11, 1928.

To all dealers:
Gentlemen:

Many valuable suggestions and sales plans for the sale of Copeland refrigeration are contained in ELECTRIC REFRIGERATION NEWS. This semi-monthly paper is issued by ELECTRIC REFRIGERATION NEWS, 554 Maccabees Building, Detroit, Michigan. The subscription price is $1.50 for one year or $2.00 for two years. You can remit direct to them.

In the March 28th issue the details of a retail selling plan used in a town of 7,000 population and doing one hundred thousand dollars worth of business the first year, is very interesting.

This selling plan would be an ideal one for you to use in your territory and we are attaching herewith copy of same. Give this plan your serious consideration and write us your views on the matter.

Very truly yours,
M. H. MOISE CO.,
By Fred H. Sides,
Sales Mgr.

OUR BANKER FRIEND FROM ILLINOIS BUYS A MACHINE

(An answer to the editorial "Knocking Competitors—Does It Pay?")

"I am in receipt of your letter of April 2, also the March 28 issue of ELECTRIC REFRIGERATION NEWS and have read with interest your editorial on page 16 which you say was inspired by my former letter. I believe the points you make in your editorial are well taken. In my opinion every salesman should be enthusiastic about the product he is selling, but I don't believe it is good policy to knock the other fellow too hard, especially with something as new to the general public as electric refrigeration.

"We purchased a General Electric Refrigerator and are enjoying it very much. It is almost uncanny to note how it automatically keeps the temperature within a very few degrees through the twenty-four hours. In choosing the General Electric we took several things into consideration. For one thing, we acted upon your suggestion to pick a refrigerator *manufactured by a reliable company* and to *buy it from someone who would give us service.* We considered the General Electric Co. able and willing to fulfill any promise or statement they might make and we purchased from the Illinois Power & Light Corp. who, as we know from experience, is very good in servicing anything they sell.

"I wish to thank you for the interest you took in my case and to thank you for the suggestions and advice you gave me. I assure you that it was a great help in deciding on what to do. With best wishes, I remain"

WHO WAS THE INVENTOR OF THE REFRIGERATING MACHINE?

"Not that it means anything particularly, but in the article by Frank I. Weller on page 7 of ELECTRIC REFRIGERATION NEWS, Volume 2, No. 15, Serial 39, Mr. Weller has stated that 'Artificial refrigeration discovered by a German in 1867.'

"Mr. Weller is about 17 years late in his date as according to the information I have been lead to believe, the Gorrie Air Machine, which was invented by Dr. Gorrie in New Orleans in 1850, was the first artificial ice machine.

"If I am in error, I would like to be corrected and if not let's bring the invention back to Louisiana."—J. R. Lassiter, Jr., Solid Carbonic Co., Ltd., 100 East 42 St., New York.

A SALESMAN'S VIEW ON "KNOCKING COMPETITORS"

As a reader of your paper since its beginning, I always admired the frankness of your editorial columns.

Your editorial in the March 28th issue entitled "Knocking Competitors—Does It Pay" certainly started or perhaps will start some "fireworks."

It is possible that you may appreciate this letter from a salesman in the field and in return I'm going to be as frank as you are.

I have been selling Frigidaire for almost three years and am at present connected with the Long Island Lighting Company, Nassau County division.

Every year some new wonderful machine far in advance of anything in the field appears on the horizon and threatens, by its evident superiority (in its advertising) to drive every other refrigerator from the market, and right here, I might add, the "fireworks" previously mentioned begin.

Possibly the next few paragraphs sound biased; you are the best judge of that. Checking up, however, you will find them pretty fair. According to the General Electric Company, the reigning sensation of the year is their new refrigerator. There is no question in my mind, however, that the reliability of their machine is unquestionable.

I think you will agree with me that glancing at a Frigidaire advertisement, one finds health protection, food preservation, economy in investment stressed throughout—which is in line with your ideas of "selling the need." I think you have been trying to put this idea across for several years, haven't you?

The average General Electric advertisement reads—No pipes or drains, no oiling, no fans, no belts, no service, no heat going through the box. There is not a word mentioned about some of the features or benefits you have been stressing. If this is not "knocking" (about 3 millions of dollars worth) the other fellow's machine, I give up. Am I correct or not?

According to the average G. E. salesman, everytime some other machine is sold, the most dastardly crime in the annals of civilization has been committed and eventually this machine will be replaced by a G. E. It is true that this is prevalent among "green" men, but surely they have experienced men at their helm, who ought to know better.

Perhaps you may answer me that the men at the helm know nothing of this. Glance at the General Electric manual containing specifications and answers to objection and you will find it purely a mechanical demonstration. They are not sold on this Health idea at all.

Look over the Frigidaire manual and find those features you are always pounding on—health protection, etc. We are by no means saints, but we have already learned by experience that health, economy, etc., produce far better results than mechanical features.

Does not the average person buy an electrical refrigerator for better refrigeration service rather than because it does not sound like a stone crusher or that it has no drain, etc? Right or wrong?

It is quite true that G. E. has to have some lever to put their machine across, but man—we couldn't sell them all if we gave them away. Correct this time or not?

Lots of refrigeration conventions have convinced me that after patting our competitors on the back, we turn around and start knocking as soon as they turn them.

This letter has certainly been a long drawn out one, but sometimes it is best to get everything off one's chest. I trust that you will be the means of accomplishing of the idea of the "Selling the Need" as you will find the Frigidaire organization solidly behind you as well as every good Frigidaire man.

It certainly would be a pleasure hearing from you in your column or by letter, and I am

Yours for Health Protection, Food Preservation and Economy.

A. Israel
8843—87th Street,
Woodhaven, L. I., N. Y.

Lubrication of Compressors

By J. B. Rathbun, Chief Engineer, Utilities Engineering Institute

AS with the early automobile, the lubrication of the compressor is not receiving the attention that it deserves; in the majority of cases insufficient thought has been given to this most important subject. Since improper lubrication causes rapid wear of the moving part, thereby greatly increasing the power required to drive the compressor, it is evident, to attain maximum life and efficiency, that both the lubricant and lubricating systems must be given serious consideration.

Forced Feed lubrication, at the present time being used on only two or three makes of refrigerating compressors, is by far the most desirable method of applying oil to the bearings and pistons. A positive oiling system forces the lubricant into the smallest clearance spaces when the machine is new, hence maintaining a perfect fit between the moving parts for the longest possible time. With proper forced feed lubrication the atmospheric temperature and oil quality are not of so much importance, for the oil pump measures off and feeds a highly viscous oil as readily as a light zero test oil. With splash systems a viscous oil, or an oil stiffened by cold, will not feed properly into the bearings as there is but little pressure applied.

There are a great many variable factors concerned in splash lubrication that affect the quantity of oil actually applied to the rubbing surfaces. Temperatue affects the viscosity so that an excess of oil is fed to the pistons at high temperature and a deficiency at low temperatures. The oil level height may decrease or unduly increase the amount of oil sent to the bearings, and the nature of the oil itself has much to do with the supply. Some oils form a more tenacious film than others and are best adapted to splash feed. Others have a greater degree of capillarity and flow better into small clearances under the urge of surface tension than other oils. With the pressure system these factors do not control the amount of oil entering the clearance spaces of the bearings.

The amount of oil fed to the pistons should be measured off in definite quantity so that it will not be pumped out into the circulating system to cause trouble in the condenser or evaporator. When these surfaces become coated with oil, the heat transfer is very much reduced and efficiency is sacrificed. This fouling increases as the wear on the pistons and cylinders increases, and there is a point where oil pumping will definitely limit the output of the compressor and the thermal capacity of the system with splash lubrication. With force feed it is possible to cut down the oil supply with increasing wear, and thus maintain a clean circulating system.

There is always a tendency toward using a heavy viscous lubricant that has no place in a small machine like the domestic refrigerator compressor. Such oils do not flow freely and if they are too thick to enter the clearance space properly it is certain that they have little lubricating value. At ordinary room temperatures there is a great difference in the viscosity of different oils, but as the temperature increases this difference becomes less and less until at about 250 degrees F. the viscosity of all petroleum lubricating oils becomes practically the same regardless of how great the difference at room temperature. This is a point that should be carefully considered for it reacts against the use of viscous oils—oils that are highly viscous only when the machine is cold.

Flash point and fire point are not in any way related to the combustible temperature of oils, and are only indirectly related to evaporation rate. Flash and fire tests have but little significance in compressor oils except for matching up samples. As far as performance is concerned a high flash and burn point have no real meaning, but are only of interest to the oil refiner. The cold test, however, is of marked importance for it indicates the temperature at which the oil becomes too thick to flow. Paraffin base oils, of which the Pennsylvania oils are examples, have a very high cold test for a given viscosity and hence are not well suited to cold running conditions.

Asphaltic oils thin out more rapidly at hight temperatures than the paraffin base oils, but on the other hand, most of them remain fluid at very low temperatures, even below 0 degrees F. They are eminently suited for compressors located in cold places. Therefore, both the paraffin and asphaltic base oils have their fields of usefulness, and neither class of oil can be said to be the "best" for all conditions. The popular belief that paraffin oils are superior to asphaltic oils under all conditions is untrue, and it can be said that the best known and most successful of lubricating oils are of asphaltic base. Paraffin base oils always contain a large percentage of paraffin wax which solidifies and thickens the oil at low temperatures. Asphaltic base oils contain little or no paraffin and hence withstand lower temperatures.

There are two morals to the use of lubricants. First, that we should use as light an oil as possible. Second, that we should use paraffin and asphaltic base oils judiciously, each for its own particular field. There are no cure-alls among lubricating oils. Each grade and base fills a particular niche in the scheme of things.

And now we come to the subject of friction and power loss. It is evident that the primary requisite of an oil is its friction reducing properties. The oil film, unlike water and other non-lubricants, forms an amalgam with the bearing surfaces that reduces friction, and the ability to form this film of sufficient thickness is the measure of the lubricating property of the oil. Some oils form the amalgam rapidly and replace it rapidly when ruptured. Such oils are "good lubricants." Other oils react slowly and are "poor lubricants," causing friction and loss of power. In very few cases is a sufficient film of oil established to float the shaft free of the bearings as is the popular conception. If an oil is viscous enough to afford momentary floating of the shaft, then you may rest assured that it has a high internal resistance that wastes power by fluid friction.

Viscous oils waste power in proportion to their thickness or viscosity, and on a small high speed compressor this fluid friction loss may amount to 60 per cent of the total friction loss with a heavy oil. In other words, the use of a highly viscous oil defeats the very purpose for which it was intended—the reduction of friction. Oil salesmen love to dwell on the subject of "viscosity." To their untrained minds this is the essential property of a lubricant, but it is not. If viscosity were the prime requisite of a lubricant, then why not use molasses or shoemaker's wax which are more viscous than any lubricant?

Viscosity is the reverse of fluidity. The more fluid and limpid an oil, the lower its viscosity. Viscosity has noting at all to do with lubrication proper but it does affect the amount of oil entering the bearings and the power loss by fluid friction. With small lightly loaded high-speed machines fluid friction is the most significant, for the shearing and tearing of the oil film assists in turning the meter in the current supply system. The thinner and easier the oil film tears, the less will be the power consumed.

FERRO ENAMEL BOOK COVERS THE TECHNIQUE OF APPLYING ENAMEL

A copy of "The Technique of Vitreous Enameling" by J. E. Hansen, has been received from the Ferro Enameling Co., Cleveland, Ohio. As is mentioned in the foreword by H. D. Cushman, president of the company, while it is realized that the industry is in such a transitional stage that any practices or processes which are the last word today may become obsolete tomorrow, there has been a need for a book devoted particularly to the technique of applying enamel. This book is offered primarily as a hand-book or text-book for enamelers.

The material in the 203 pages of the book appears under the following paragraph headings which will serve to indicate the subjects taken up:

Selection and fabrication of the base metal for enameling, Preparation of Metal Surfaces, Enamel Mill Room Practice, Mill Additions, Color and Color Matching, Application of the enamel, The Drying and Brushing of Enamel, Burning, Inspection, Graining, Stencils and Decalcomanias, Notes on Shop Troubles, Enamel Shop Management, Useful Data.

At the end of each chapter is a list of questions designed to test the reader on the information contained in the chapter.

The book is illustrated with photographs showing many of the operations in an enameling plant.

Salesman Sets His Year's Quota At 600 Units

Twenty-six installations in two weeks is the record of Everett H. Sowards, Whiteville, Ky., Copeland electric refrigerator salesman. Calling at the Armour packing plant he sold the manager, the assistant manager and two of the salesmen in one call. Sowards has set his mark as 600 for the year.

Loan of Window Space for Flower Show Pays Dividends in Good Prospects

Publicity Draws Floral Enthusiasts From Miles Around —Frigidaire Gets Prominent Place in Display

By Archie Richardson

THE most effective electric refrigerator display ever shown by the Virginia Electric and Power Company at its Portsmouth, Virginia, office was likewise one of the most easily arranged and most inexpensive they ever put in.

The women who buy electric refrigerators, G. H. Smith, sales manager, and his co-workers reasoned, is a lover of flowers who takes pride in those she grows herself and who is a good customer of the florist if she can't have a garden of her own, and they decided to capitalize this love for flowers in showing the women of Portsmouth the choicest refrigerator with the choicest flowers.

Accordingly, an arrangement was made between the power company and the West Park View Garden Club whereby the Spring exhibit of the club would be shown to the people of the city in the company's best window.

The date was arranged at a time when spring flowers were at their best in the Portsmouth gardens, and the exhibit that was placed in the window represented the choicest specimens from the gardens of some two dozen of the city's most skilled amateur flower growers.

Knowing that the exhibit would be seen by practically every woman in the city, the club's committee in charge of the exhibit took pains that each vase and basket to be placed in the window not only should be made up of the best specimens grown by their members but should be arranged to show each flower to best advantage. Likewise, they co-operated with the window trimmer and helped him arrange the whole so even the most critical who viewed the exhibit from the street could not pick a flaw in it.

But before the flowers were put in, there was placed in the most prominent part of the window the electric refrigerator the company was featuring at the time. For the purposes of the display, the compartments were filled not with the usual perishables but with food products of local manufacturing concerns, for the company was at the time conducting an educational campaign to acquaint the people with "made in Portsmouth" products and they deviated from their usual plan of showing refrigerators to give the home makers of food products a boost.

Many flower lovers also came from Norfolk, Newport News, Suffolk and other towns for many miles around to see the exhibit which received extensive newspaper publicity in the news columns, on the society page and in the power company's advertising in advance and throughout the week of the display.

There was no special follow-up on the showing of the refrigerator and no means of estimating the selling value of the display. But it was known that practically every woman in the city whom it was desired to sell on electric refrigeration saw the display, and the refrigerator salesmen who later went into the homes found the refrigerator pretty generally associated with the flower show in the minds of the people called on. The display, of course, brought some immediate inquiries about the refrigerator shown in the window, but these were regarded as representing but a small portion of the sales benefit derived from the showing.

The experience, however, convinced the company as to the effectiveness of the use of cut flowers in connection with window displays, especially where it is especially desired to reach and interest women, and the idea has been often used to good effect.

To preserve the flowers as long as possible it was found necessary to take special pains, such as keeping the direct sunlight off them and keeping the air of the window cool and in circulation with an electric fan. And to extend the life of the flowers to the limit, it was learned, fresh water must be placed in the vases every morning and the tips of the stems cut off with a sharp knife. With such care, many flowers can be kept perfectly fresh in a window a full week or even longer.

Youngstown Copeland Distributor Takes Dealers to Cleveland Meeting

The Good Housekeeping Shop, Market St., and Princeton Ave., Youngstown, O., distributors of Copeland refrigeration took its entire dealer organization to Cleveland on April 17 to attend a district sales meeting held under the supervision of W. D. McElhinny, general sales manager of Copeland Sales Company, Detroit.

Bishoff Electric Reorganizes

The Bishoff Electric Shop, 288 Asylum Street, Hartford, Conn., distributors of Ice-Berg electric refrigerators has been incorporated and reorganized under the name of Bishoff & Brooks. Officers of the new company follow: Harry Bishoff, president; C. A. Pease, vice-president; John S. Brooks, secretary. As a small concern this company sold 80 units in the past two months.

Dayton Personnel Association Visits Frigidaire Plant

A meeting of the Dayton Personnel Association was held on April 10 at the Moraine City plant of the Frigidaire Corp. Inspection of the plants was made and talks were given by several of the departmental supervisors. Dinner was served in the plant cafeteria. Approximately 100 people were present.

Youngstown Frigidaire Dealer Will Have New Quarters

William F. Gray, Inc., Frigidaire distributors, Youngstown, Ohio, now located at 29 So. Philips St., will move in the near future to a new location in the Dollar Savings Bank building.

"We are always glad to receive the NEWS as it contains much information of interest to us."—R. L. Darnall, president, Kelvinator Corp. of Pasadena, Calif.

KELVINATOR DEALERS MEET FACTORY HEADS AT ST. LOUIS AND OMAHA

Over one hundred Kelvinator dealers and distributors were in attendance at the Kelvinator dealer convention held at Omaha, Neb., March 31, the first of such meetings held in the St. Louis district this year.

The second convention held at St. Louis, on April 3, was attended by approximately 150 dealers and distributors from eastern Kansas, Missouri and Illinois. The new Kelvinator models shown for the first time at these two meetings were enthusiastically received. Both the St. Louis and Omaha conventions were closed with a dinner and "talk-fest" outlining exceptional experiences in the sale of Kelvinators.

Factory officials taking part in both of these conventions were: R. E. Densmore, director of districts; E. T. Foote, manager commercial department; R. I. Petrie, new business manager of Re Disco, Mr. Mitchelltree, window trim department and Major Carson of the N. W. Ayer Co. H. Troutwine, district manager, presided at both conventions.

Unit Saves Florist $8 a Month on Ice and Eliminates Loss by Spoilage

Proprietor of Boo-Kay Shop, Denver, Recommends a High Grade Box with Electric Refrigeration

By Thomas R. Thompson

J. F. Breen, proprietor of the Boo-Kay Shop, Denver, Colorado, is enthusiastic in his endorsement of electric refrigeration.

"It not only saves me $8 a month on my ice bill, but it enables me to sell crisp, fresh flowers to my customers all the time. I never have to throw flowers away, because my refrigerator keeps them so well that I can have them in stock several days and still sell them. I say that I never have to throw flowers away—of course, there are always exceptions to the most perfect rul,e but I mean that my loss in stock which must be thrown out is so small that it is negligible," asserted Mr. Breen.

Customers Get Better Flowers

"My refrigerator makes satisfied customers for me, because it keeps flowers in such a condition that they do not wilt and droop when they are exposed in a comparatively warm room. My Frigidaire maintains a temperature of forty-eight degrees all the time. In an ordinary ice box, which I had access to in a former floral connection, I found that the temperature varied with the amount of ice in the box, and with the number of times I opened the door. This, of course, is not true with my electric refrigeration system.

"Flowers keep best at a moderate and constant temperature, and they will show up to a better advantage in the home of a customer if this temperature is maintained. If they are kept too cold, they wilt quickly when exposed to warmth; if they are not kept sufficiently cold, they open and lose their sale value and must be thrown away. This means a loss, and my machine saves me all of this."

Good Refrigeration As Important As Good Quality Flowers

The above mentioned benefits and advantages are further augmented by things the electric refrigerator does not do, says Mr. Breen. "Not only that, but we do not have the inconvenience of men tracking up our floor and disturbing our customers on busy days. It is just another worry off our minds. In the past two months the thing has drained off only half a bucket of water. I am convinced that a florist is losing money if he does not have an electric refrigerator. It is as important as having good quality flowers."

Mr. Breen's Frigidaire is a unit of 500 pounds ice melting capacity. It is contained in a birch case 9 feet 6 inches by 7 feet 8 inches by 4 feet 8 inches, outside dimensions. The storage portion has a side entrance and a double plate glass front. It is insulated by two inches of cork and one inch of mineral wool. The box was built especially for the Boo-Kay Shop.

Mr. Breen is a firm believer in high grade refrigerators and says that a cheap box is the most expensive in the long run, with any type of refrigeration.

200 Homes in Illinois Town to Have Electric Refrigeration

A home building project has been announced in Calumet City, Ill., where the Scharfenorth Construction Co. plans to build 200 bungalow type dwellings immediately with an investment in land and buildings of $2,500,000. Electric refrigeration is to be included among the conveniences in these homes.

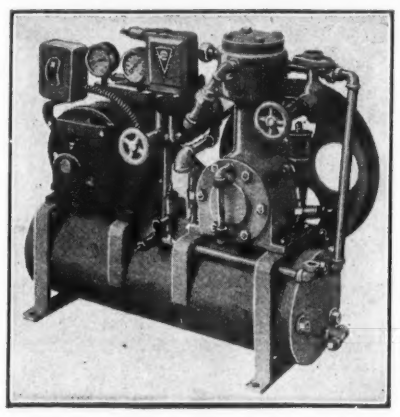
Electric Refrigeration Machine Specifications

A Special Survey of the Principal Features of Compressor Units

AMERICAN ENGINEERING CO.
Aramingo Ave. and Cumberland St., Philadelphia, Pa.

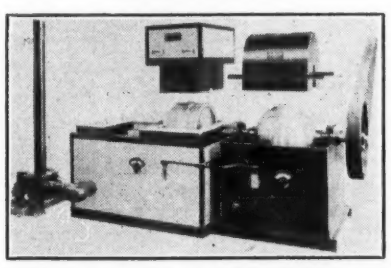
Refrigerant—ammonia.
Control—temperature.
Condenser—multipass, shell and tube.
Method of cooling—water.
Compressor—reciprocating.
Drive—belt.
Seal—metallic packing.
Capacity, ice melting—from ¼ ton to 30 ton.
Motor—from ½ to 50 H. P.
Cooling unit—direct or brine, according to application.

Complete automatic refrigerating units are manufactured in sizes from ¼ ton to 4 tons refrigeration per day.



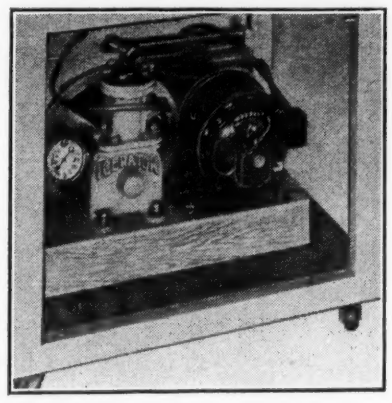
ARMSTRONG MACHINERY CO., INC.
E. 3201 to 3219 Riverside, Spokane, Wash.

Refrigerant—anhydrous ammonia.
Control—pressure and temperature.
Condenser—single pipe with air, double pipe with water.
Method of cooling—water.
Compressor—reciprocating.
Drive—belt.
Seal—Armstrong ring seal.
Capacity—ice melting, from 20 lbs. to 20 tons.
Motor sizes—½ to 50 H. P.
Type of cooling unit—direct and brine.



AUDIFFREN REFRIGERATING MACHINE COMPANY
285 Madison Avenue, New York City.

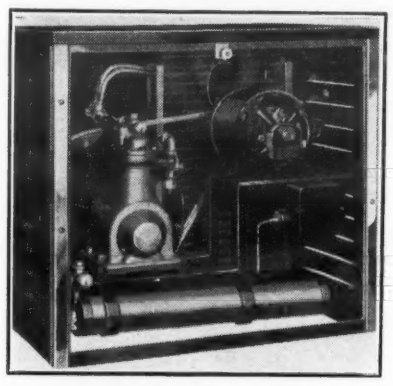
Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—rotating drum.
Method of cooling—air and water.
Compressor—reciprocating.
Drive—belt.
Seal—hermetical.
Capacity—ice melting, from 1/10 to 3 tons.
Motor Sizes—⅓ to 7½ H. P.
Type of cooling unit—brine circulation.
Ice cube capacity—from 28 to 600 cubes; from 25 to 2,400 lbs.



AUTOELECTRIC ICERATOR CORPORATION
16 Court St., Brooklyn, N. Y.

Refrigerant—methyl chloride.
Control—temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—sylphon.
Motor sizes—1/6 H. P.
Type of cooling unit—direct.
Ice cube capacity—56 cubes, 12 lbs.

We manufacture only one model—6 cu. ft, 7¼ sq. ft. shelf space.



AUTOMATIC FREEZER SYNDICATE
1716 Ford Bldg., Detroit, Mich.

Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—radiator.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—bellows type.
Capacity—to 350 lbs. ice.
Motor sizes—1/3 H. P.
Type of cooling unit—brine.

At present supplying refrigerating units for commercial use only. The description furnished applies to our 2-cylinder compressor.

BELDING-HALL ELECTRICE CORPORATION
Belding, Mich.

Refrigerant—sulphur dioxide.
Control—thermostatic.
Condenser—fin tube.
Method of cooling—air.
Compressor—rotary.
Drive—direct.
Seal—Cooke seal.
Capacity—from 5 to 22 cu. ft.
Motor sizes—1/6 to ¼ H. P.
Type of cooling unit—direct expansion.
Ice cube capacity—from 36 to 192 cubes; from 3⅞ to 20½ lbs.

BAKER ICE MACHINE CO., INC.
Omaha, Nebr.

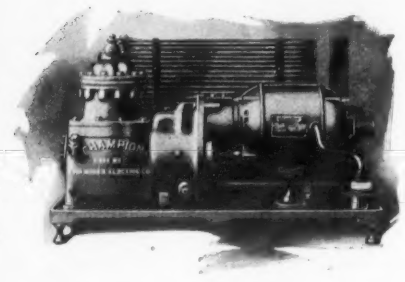
Refrigerant—ammonia and methyl chloride.
Control—pressure, temperature and thermostatic.
Condenser—all types.
Method of cooling—water.
Compressor—reciprocating.
Drive—direct-chain and belt.
Seal—metallic, semi-metallic and soft.
Capacity—ice melting, from ¼ to 100 tons.
Motor sizes—from ½ to 200 H. P.
Type of cooling unit—all types.
Ice cube capacity—optional.

Electric Refrigeration Machine Specifications

(Continued)

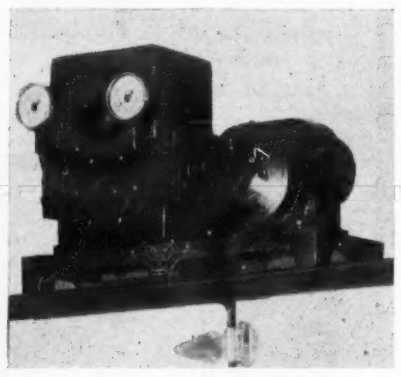
COPELAND PRODUCTS, INC.
630 Lycaste Ave., Detroit, Mich.

Refrigerant—freezol and methyl chloride.
Control—both pressure and temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—V. belt.
Seal—bellows.
Capacity—ice melting, from 125 to 500 lbs.
Motor sizes—from 1/6 to 2/3 H. P.
Type of cooling unit—direct and with brine.
Ice cube capacity—from 30 to 378 cubes; from 4.1 to 24½ lbs.



CHAMPION ELECTRIC CO.
Paulina St. and Diversey Parkway
Chicago, Ill.

Refrigerant—sulphur dioxide.
Control—pressure.
Condenser—tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—both gear and belt.
Seal—sylphon.
Capacity—ice melting, from 30 to 200 lbs.
Motor sizes—from 1/6 to 1/3 H. P.
Type of cooling unit—direct.
Ice cube capacity—from 36 to 90 cubes; from 6 to 15 lbs.

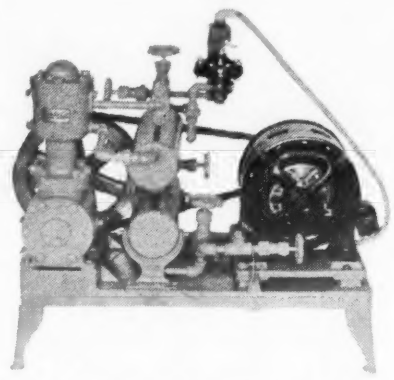


COOKE ELECTRIC REFRIGERATION CO.
30 No. Green St., Chicago, Ill.

Refrigerant—ammonia.
Control—temperature.
Condenser—submerger.
Method of cooling—water.
Compressor—reciprocating.
Drive—V. belt.
Type of seal—Cooke seal ring.
Capacity—ice melting, from 125 lbs. to 350 lbs.
Motor sizes—from 1/6 to ¾ H. P.
Type of cooling unit—brine.
Ice cube capacity—from 48 to 72 cubes; from 8 to 12 lbs.

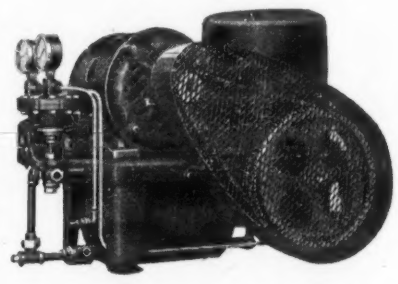
DOMESTIC ELECTRIC REFRIGERATOR CORPORATION
No. 2 West 46th St., New York

Refrigerant—ethyl chloride.
Control—temperature.
Condenser—radiator.
Method of cooling—air.
Compressor—rotary.
Drive—direct.
Seal—hermetically sealed.
Capacity range—ice melting, from 80 to 100 lbs.
Motor sizes—⅛ H. P.
Type of cooling unit—direct.
Ice cube capacity—72 cubes; from 8 to 10 lbs.



DOLE REFRIGERATING MACHINE COMPANY
1209 West Washington Blvd., Chicago, Ill.

Refrigerant—ammonia.
Control—temperature.
Condenser—submerged.
Method of cooling—water.
Compressor—reciprocating.
Drive—belt.
Seal—metal packing.
Capacity, ice melting—from 250 to 3000 lbs.
Motor sizes—from ¼ to 2 H. P.
Type of cooling unit—direct or brine.



EXCELSIOR MOTOR MFG. & SUPPLY CO.
3701 Cortland St., Chicago, Ill.

DEVON MANUFACTURING CO.
677 Cambridge St., Worcester, Mass.

Refrigerant—pure air.
Control—temperature.
Condenser—none.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—none required.
Capacity, ice melting—to 200 lbs.
Motor sizes—¼ H. P.
Type of cooling unit—direct.
Ice cube capacity—15 lbs.

NEW YORK BUILDING MANAGERS DEMANDING BONUSES FROM SUPPLIERS

Under the heading "Too Many Bonuses!" the *Weekly Bulletin* of the Forty Second Street Property Owners' and Merchants' Association, Inc., 50 East 42nd St., New York City, says:

"Complaints have been received by the Association that an ever-increasing demand is being made for 'bonuses' by building managers, and in some cases by building owners, from the firms which sell various supplies for building. This exacting of a rather unethical fee in the buying of building supplies means that in the long run the tenants pay the bonuses. One firm which had been ethical in all its dealings is said to have been forced to adopt the bonus practice, the first of the year, because competitors had been getting most of the business through paying commissions. Ways of halting this unfair practice are being studied by the Association."

Monroe, Wis., Dealer Moves to New Store

The Meythaler Electric Co., of Monroe, Wis., of which Frank W. Meythaler is owner and manager, recently moved into new quarters at 218 West Russell St. The company was started March 1, 1921, and in 1927 Mr. Meythaler purchased the Delco Light interests of the Green County Electric Company. Orville McQuillan is assistant manager and Arthur Disher is service Manager of the Frigidaire department.

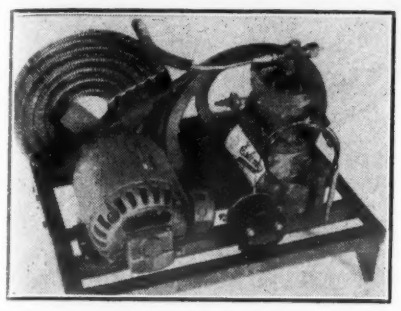
Athens, Ga., Frigidaire Dealer Opens New Showroom

Harrison & Barrow, Athens, Georgia, Frigidaire dealers, recently announced the opening of their new salesroom and offices at 244 So. Washington St.

Electric Refrigeration Machine Specifications
(Continued)

ELECTRO VACUUM REFRIGERATOR CO., INC.
202 East 43rd St., New York City

Refrigerant—sulphur dioxide.
Control—pressure and temperature.
Condenser—fin tube.
Method of cooling—water.
Compressor—rotary.
Drive—direct.
Seal—oil.
Capacity—ice melting, from 200 to 5,000 lbs.
Motor sizes—from ¼ to 5 H. P.
Type of cooling unit—direct and brine.
Ice cube capacity—depending on size of installation.
Commercial refrigeration exclusively.



ESKIMO REFRIGERATION CO.
914 Columbus Ave., Sandusky, Ohio

Refrigerant—methyl chloride.
Control—temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—V. belt.
Seal—sylphon.
Capacity—from 5 to 40 cu. ft.
Motor sizes—1/6 to 1/3 H. P.
Type of cooling unit—brine.
Ice cube capacity—from 84 to 300 cubes; from 7 to 24 lbs.

EVERITE PRODUCTS, INC.
200 Davis Ave., Dayton, Ohio.

Refrigerant—sulphur dioxide.
Control—pressure.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—mechanical.
Capacity—from 5 to 25 cu. ft, domestic; commercial ¼ to ½ ton.
Motor sizes—from 1/6 to 1½ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 36 to 96 cubes; from 6 to 12 lbs.

FRIGIDAIRE CORPORATION
Dayton, Ohio.

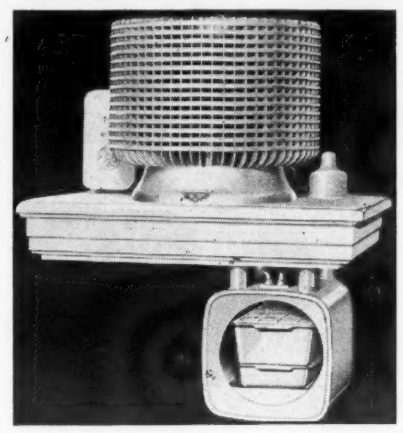
Refrigerant—sulphur dioxide (SO_2).
Control—pressure and temperature.
Condenser—radiator and fin tube.
Method of cooling—air and water.
Compressor—reciprocating.
Drive—belt.
Seal—flexible metallic seal.
Capacity—ice melting, up to 500 lbs. per 12 hour running time.
Motor sizes—from ⅙ to ½ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 30 to 168 cubes; from 4 to 23.5 lbs.

FROZONE CORPORATION
709 Chestnut Street, Philadelphia, Pa.

Refrigerant—methyl chloride.
Control—pressure.
Condenser—radiator.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—copper bellows, ground joints.
Capacity—from 4.6 to 20 cu. ft.
Motor sizes—from ⅙ H. P. to ¼ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 56 to 108 cubes; from 5 to 10 lbs.

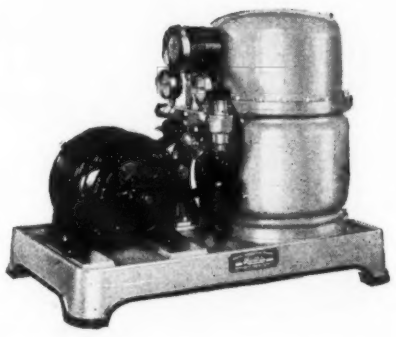
GENERAL NECESSITIES CORP.
2001 Park Avenue, Detroit, Michigan

Refrigerant—methyl chloride.
Control—pressure and temperature.
Condenser—radiator and fin tube.
Method of cooling—air and water.
Compressor—reciprocating.
Drive—belt.
Seal—bellows type.
Capacity—ice melting, from 100 to 2000 lbs.
Motor sizes—from ⅙ to 2 H. P.
Type of cooling unit—direct and brine.
Ice cube capacity—from 18 to 189 cubes; from 4 to 25.2 lbs.



GENERAL ELECTRIC COMPANY
Electric Refrigeration Dept.
Hanna Building, Cleveland, Ohio.

Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—copper tubing and fins.
Method of cooling—air.
Compressor—reciprocating.
Drive—direct.
Seal—hermetically sealed.
Capacity range—from 3½ to 18 cu. ft.
Motor sizes—from ⅛ to ⅙ H. P.
Type of cooling unit—direct for ice trays, indirect for cooling cabinet (freezing solution).
Ice cube capacity—from 48 to 112 cubes; from 5½ to 12½ lbs.



GENERAL REFRIGERATION COMPANY
Beloit, Wis.

Refrigerant—ammonia.
Control—temperature.
Condenser—shell and tube; shell and coil.
Method of cooling—water.
Compressor—reciprocating.
Drive—belt.
Seal—oil.
Capacity—ice melting, from ¼ to 20 tons.
Motor sizes—from ½ to 40 H. P.
Type of cooling unit—either direct expansion or brine.
Ice cube capacity—optional.

HAVEN MANUFACTURING CO.
486 Milwaukee St., Milwaukee, Wis.

Refrigerant—methyl chloride.
Condenser—radiator.
Control—pressure or temperature.
Method of cooling—air or water.
Compressor—special oscillating—reciprocating type.
Drive—direct.
Seal—metallic rings with permanent oil seal.
Capacity—ice melting, from 100 lbs to 900 lbs.
Motor sizes—from 1/6 to ¾ H. P.
Type of cooling unit—direct and brine.
Ice cube capacity—from 40 to 160 cubes; from 3½ to 13½ lbs.

"LIBERTY" PRESENTS THE STEP SAVING KITCHEN

The experimental kitchen maintained by *Liberty* Magazine is described by Ethel Somers on page 72 of the April 28 issue. The laboratories used by *Liberty* to experiment with recipes and other problems of the housewife is maintained in a real home with a kitchen of the "new colorful variety." The built-in kitchen cabinet, Miss Somers admits, was selected for *color* as well as for convenience and comfort.

Four distinct "work centers" with a detailed list of equipment for each, are indicated in the article. "Work center No. 1" is the sink. "Work center No. 2" is the kitchen cabinet, No. 3 the range and No. 4 the mechanical mixer.

The electric refrigerator, it may be noted, is *not* included among the "work centers," being one of the few household appliances which are absolutely automatic in operation.

Two New General Electric Dealer Appointments in Wisconsin

Among recent General Electric refrigerator dealer appointments in Wisconsin are the Brodhead Hardware Co., at Brodhead, and Charles Turnock at Kenosha. Lawrence Johnson and R. J. Traeger will be associated with Mr. Turnock as salesmen of the refrigerator machines.

Milwaukee Men Attend Kelvinator Meeting at Chicago

Among the Milwaukee men to attend the Kelvinator convention at the Palmer House in Chicago, March 27, were J. W. Hill, W. S. Ounsworth, N. C. Christopherson and E. E. Jones all of the Electric Co., at Milwaukee.

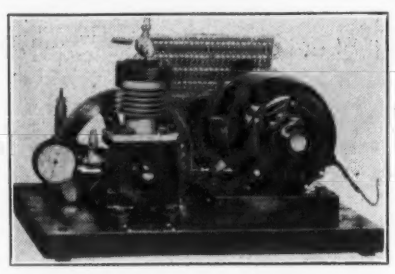
Subscribe to the NEWS.
Use the coupon on page 16.

Electric Refrigeration Machine Specifications

(Continued)

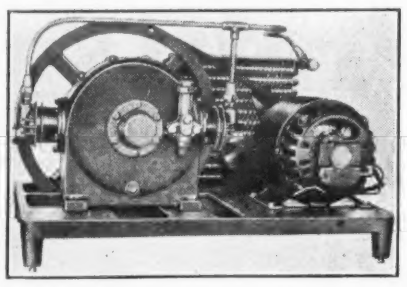
HVID ICE MACHINE CORP.
38 So. Dearborn St., Chicago, Ill.

Refrigerant—methyl chloride.
Control—pressure.
Condenser—plain tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—direct.
Capacity—from 5 to 12 cu. ft.
Motor sizes—from 1/6 to ¼ H. P.
Type of cooling unit—brine.
Ice cube capacity—to 112 cubes; 9 lbs.



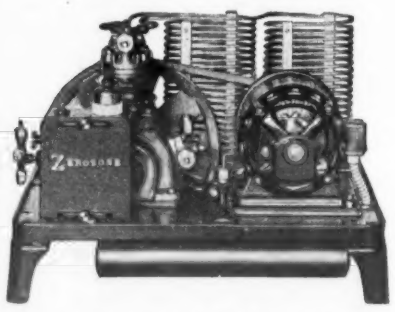
ICEBERG MANUFACTURING CO.
Gardner, Mass.

Refrigerant—methyl chloride.
Control—temperature.
Condenser—fin radiator.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—self-lubricating with bellows.
Capacity range—from 5 cu. ft. to 15 cu. ft.
Motor sizes—from 1/6 to ¼ H. P.
Type of cooling unit—brine.
Ice cube capacity—from 49 to 120 cubes; from 2½ to 6¼ lbs.



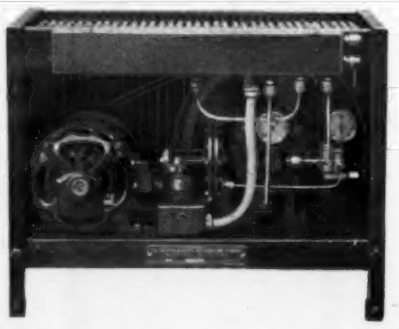
ICELECT CORPORATION
Omaha, Neb.

Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—rericprocating.
Drive—belt.
Capacity—from 4 to 15 cu. ft.
Motor sizes—from ⅙ to ¼ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 56 to 168 cubes.



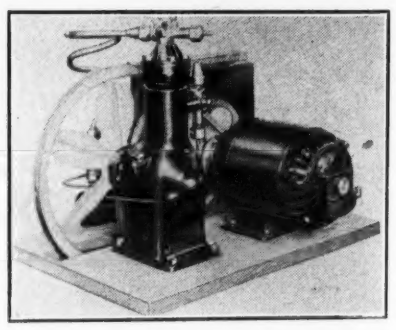
IRON MOUNTAIN CO.
929-1011 E. 95th St., Chicago, Ill.

Refrigerant—sulphur dioxide.
Control—combination pressure — thermostat.
Condenser—radiator, fin type.
Method of cooling—air and water.
Compressor—reciprocating.
Drive—1 model direct and balance of line belt.
Capacity—from 5 cu. ft. to 1000 lb. unit.
Motor sizes—from ⅙ to 1½ H. P.
Type of cooling unit—direct and indirect.
Ice cube capacity—from 42 cubes up.



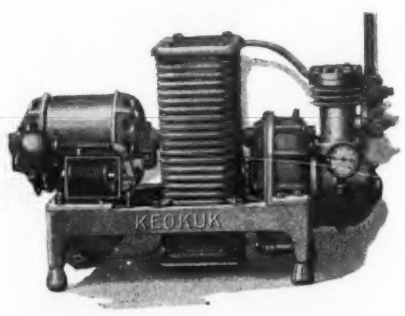
IROQUOIS ELECTRIC REFRIGERATION CO.
1600 Arch St., Philadelphia, Pa.

Refrigerant—ethyl chloride.
Control—pressure.
Condenser—header type, tubular.
Method of cooling—air.
Compressor—rotary.
Drive—belt.
Seal—metal diaphragm.
Capacity—ice melting, from 146 to 214 lbs.
Motor sizes—from ⅙ to ¼ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 32 to 110 cubes; from 2 to 13 lbs.



KELVINATOR CORPORATION
14250 Plymouth Road, Detroit, Mich.

Refrigerant—sulphur dioxide.
Control—thermostat and pressure control.
Condenser—radiator (air cooled units), copper tubing (water cooled units).
Method of cooling—air and water.
Compressor—reciprocating.
Drive—belt and worm gear.
Seal—bellows and stuffing box.
Capacity, ice melting—from 100 lbs. to 1200 lbs.
Motor sizes—from ⅙ to 1½ H. P.
Cooling unit—direct and indirect.
Ice cube capacity—from 30 to 84 cubes; from 4 to 21¼ lbs.

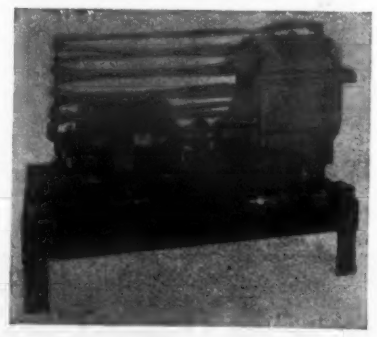


KEOKUK REFRIGERATING CO.
Keokuk, Iowa

Refrigerant—sulphur dioxide.
Control—thermostat.
Condenser—tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—direct.
Seal—friction, self-aligning.
Capacity—from 5 to 45 cu. ft.
Motor sizes—from 1/6 to 1/3 H. P.
Type of cooling unit—direct.
Ice cube capacity—from 36 to 126 cubes; from 4½ to 15½ lbs.

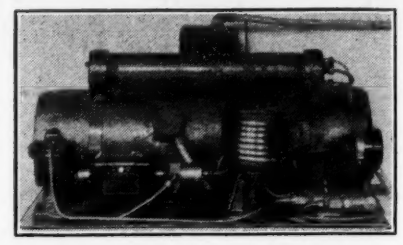
MECHANA-KOLD CORP.
Arcade, N. Y., also 126 Liberty St., New York City

Refrigerant—methyl chloride.
Control—temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—special ground ring.
Capacity range—from 5 to 30 cu. ft.
Motor sizes—from ⅙ to ⅓ H. P.
Type of cooling unit—direct expansion.
Ice cube capacity—from 48 to 192 cubes; from 5 to 20 lbs.



NARRAGANSETT MACHINE CO.
Pawtucket, R. I.

Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—rotary gear.
Drive—direct.
Seal—revolving (Cooke).
Capacity—ice melting from 72 to 700 lbs.
Motor sizes—from 1/6 to ¾ H. P.
Type of cooling unit—direct and solution.
Ice cube capacity—from 54 to 144 cubes; from 5¼ to 14 lbs.



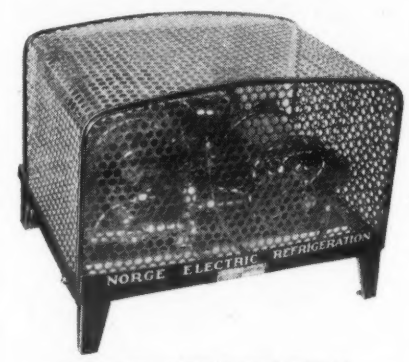
NATIONAL REFRIGERATING CO.
New Haven, Conn.

Refrigerant—ammonia.
Control—pressure.
Condenser—double pipe coil.
Method of cooling—water.
Compressor—absorber, gas or electric heat.
Drive—no drive.
Seal—hermetically sealed.
Capacity—from 6 to 15 cu. ft. net.
Motor—no motor.
Type of cooling unit—brine.
Ice cube capacity—from 30 to 90 cubes; from 3 to 9 pounds.

Absorption system using a dry absorbent for anhydrous ammonia—permitting the use of copper tubing and remote installations.

NIEBLING, F. W. & CO.
406 Elm St., Cincinnati, Ohio

Refrigerant—ammonia.
Control—various types.
Condenser—double pipe.
Method of cooling—water.
Compressor—reciprocating.
Drive—direct or belt.
Seal—various kinds of packing.
Capacity—any size.
Motor sizes—from ¼ to 500 H. P.
Type of cooling unit—direct and brine.



NORGE CORPORATION
670 East Woodbridge St., Detroit, Mich.

Refrigerant—sulphur dioxide.
Control—pressure.
Condenser—radiator.
Method of cooling—air.
Compressor—rotary.
Drive—belt.
Seal—bellows, spring type.
Capacity—ice melting, from 125 to 740 lbs. at 85 deg.
Motor sizes—from 1/6 to 1 H. P.
Type of cooling unit—direct.
Ice cube capacity—from 56 to 212 cubes; from 4.1 to 16.8 lbs.

PEERLESS ICE MACHINE CO.
515 W. 35th St., Chicago, Ill.

Refrigerant—ammonia and methyl chloride.
Control—pressure and temperature.
Condenser—welded pipe.
Method of cooling—water.
Compressor—reciprocating.
Drive—belt.
Seal—peerless stuffing box.
Capacity—ice melting, from ½ to 12 tons.
Motor sizes—from 1 to 25 H. P.
Type of cooling unit—both brine and direct expansion.
Ice cube capacity—from 24 to 240 cubes.

PHOENIX ICE MACHINE CO.
2711 Church Ave., Cleveland, O.

Refrigerant—ammonia.
Control—temperature.
Condenser—shell and tube.
Method of cooling—water.
Compressor—reciprocating.
Drive—belt.
Capacity—ice melting, from ¼ to 50 tons.
Motor sizes—from ½ to 75 H. P.
Type of cooling unit—any.

POLARIS ELECTRIC REFRIGERATOR CO.
Logansport, Ind.

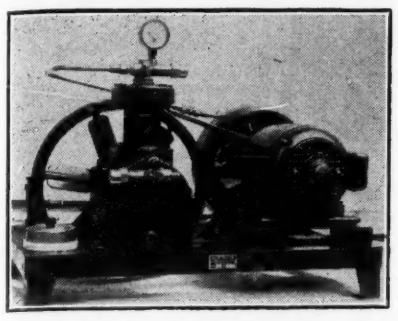
Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—diaphragm.
Capacity—ice melting, to 100 lbs.
Motor sizes—from 1/6 to ¼ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 26 to 66 cubes; from 2 to 5 lbs.

RICE PRODUCTS, INC.
315 Beaubien Street, Detroit, Michigan.

Refrigerant—methyl chloride.
Control—pressure and temperature.
Condenser—finned tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—sylphon.
Capacity, ice melting, from 200 to 1,000 lbs.
Motor sizes—from 1/6 to 1 H. P.
Type of cooling unit—direct.
Ice cube capacity—from 36 to 240 cubes; from 3¾ to 30 lbs.

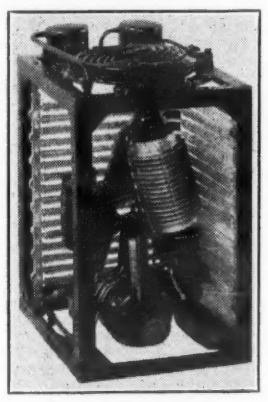
Electric Refrigeration Machine Specifications

(Continued)



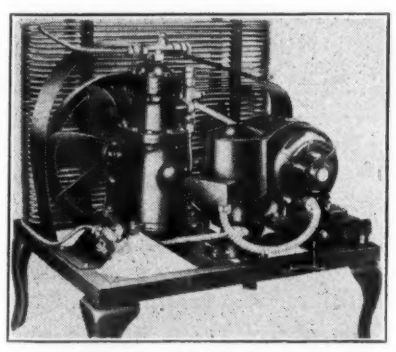
RAUF MANUFACTURING CO.
Bogota, New Jersey

Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—spiral fin tube with fan shroud.
Method of cooling—air.
Compressor—reciprocating.
Drive—V-belt.
Seal—spring and bellows.
Capacity—from 5 to 20 cu. ft.
Motor sizes—from 1/6 to ¼ H. P.
Type of cooling unit—brine tank.
Ice cube capacity—from 42 to 180 cubes; from 4 to 15 lbs.



SAVAGE ARMS CORPORATION
Utica, New York.

Refrigerant—methyl chloride.
Control—temperature control.
Condenser—fin tube.
Method of cooling—air-cooled.
Compressor—mercury type.
Drive—friction.
Seal—none required, hermetically sealed.
Capacity—from 2 to 10-hole ice cream cabinet.
Motor sizes—¼ H. P.
Type of cooling unit—jelly freezing mixture.



SERVEL SALES, INC.
Evansville, Indiana

Refrigerant—methyl chloride.
Control—pressure and temperature.
Condenser—various types.
Method of cooling—air and water.
Compressor—reciprocating.
Drive—belt.
Seal—sylphon.
Capacity, ice melting—from 125 to 1000 lbs.
Motor sizes—from ⅙ to 1 H. P.
Type of cooling unit—both.
Ice cube capacity—from 48 to 120 cubes.

SERVEL, INC. (ELECTROLUX)
Evansville, Indiana

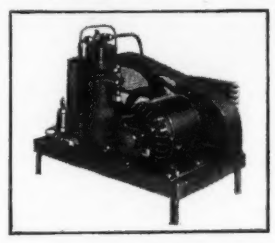
Refrigerant—ammonia — absorption type unit.
Control—temperature.
Method of cooling—water.
Compressor—electric heat.
Drive—none.
Seal—hermetically sealed.
Capacity, ice melting—from 50 to 100 lbs.
Motor sizes—no motor.
Type of cooling unit—direct.
Ice cube capacity—from 32 to 100 cubes.

THE TRIUMPH ICE MACHINE CO.
110 E. 70 St., Cincinnati, Ohio

Refrigerant—ammonia.
Control—temperature.
Condenser—shell and tube, double pipe and atmospheric.
Method of cooling—water.
Compressor—reciprocating.
Drive—direct or belt.
Seal—fibrous packing.
Capacity, ice melting—from 1 to 150 tons.
Type of cooling unit—direct or brine.
Manufacturing commercial type machines exclusively.

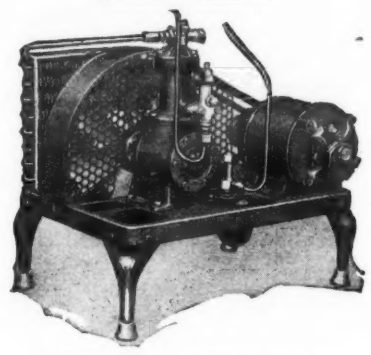
"TRUPAR" MFG. CO.
140 Davis Ave., Dayton, Ohio

Refrigerant—sulphur dioxide.
Control—pressure.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—mechanical.
Capacity—from 5 cu. ft. to 25 cu. ft. Domestic, ¼ to ½ ton Commercial.
Motor sizes—from ⅙ to ½ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 36 to 96 cubes; from 3 to 12 lbs.



UNIVERSAL COOLER CORPORATION
1214 18th St., Detroit.

Refrigerant—methyl chloride.
Control—pressure or temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—V belt.
Seal—sylphon bellows metal seal.
Capacity—ice melting, from 105 to 500 lbs. 24 hrs.
Motor Sizes—from ⅙ to ½ H. P.
Type of cooling unit—brine.
Ice cube capacity—from 28 to 126 cubes; from 2¾ to 12⅜ lbs.



WAYNE COMPANY
Fort Wayne, Indiana

Refrigerant—sulphur dioxide.
Control—temperature.
Condenser—radiator.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—sylphon bellows.
Capacity—from 5 cu. ft. to 100 cu. ft.
Motor sizes—from ⅙ H. P. to ¼ H. P.
Type of cooling unit—brine.
Ice cube capacity—from 56 to 280 cubes; from 3½ to 17½ lbs.

WARNER STEEL PRODUCTS CO.
Ottawa, Kans.

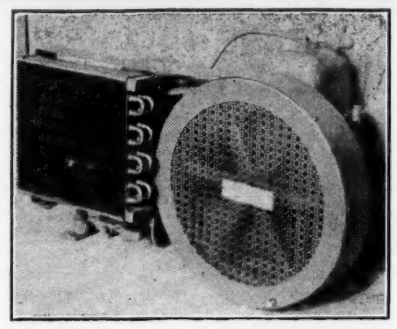
Refrigerant—sulphur dioxide.
Control—pressure.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—belt.
Seal—bellows type.
Capacity—ice melting, from 25 to 2000 lbs.
Motor sizes—from ⅙ to 3 H. P.
Type of cooling unit—direct.
Ice cube capacity—from 28 to 100 cubes; from 4 to 16 lbs.

WELSBACH COMPANY
Gloucester City, N. J.

Refrigerant—alcohol.
Control—temperature.
Condenser—fin tube and radiator.
Method of cooling—air.
Compressor—reciprocating—double acting.
Drive—belt.
Seal—sylphon—sealed with lubricant.
Capacity—ice melting, from 112 to 480 lbs. per 24 hours.
Motor sizes—from ⅙ to ½ H. P.
Type of cooling unit—brine.
Ice cube capacity—from 42 to 126 cubes; from 4 to 12 lbs.

WHITEHEAD REFRIGERATION CO.
3730 Woodward Ave., Detroit

Refrigerant—methyl chloride.
Control—temperature.
Condenser—fin tube.
Method of cooling—air.
Compressor—reciprocating.
Drive—direct.
Seal—internal-sylphon.
Capacity, ice melting—from 25 lbs. to 100 lbs.
Motor sizes—from ⅛ to ¼ H. P.
Cooling unit—brine.
Ice cube capacity—from 96 to 192 cubes; from 8 to 16 lbs.



WILLIAMS OIL-O-MATIC HEATING CORP.
Bloomington, Ill.

Refrigerant—methyl chloride.
Control—temperature.
Condenser—radiator.
Method of cooling—air.
Compressor—reciprocating.
Drive—"V" belt.
Seal—bronze against steel—bellows housing.
Capacity—ice melting, from 5 to 15 lbs.
Motor sizes—from ¼ to ⅓ H. P.
Type of cooling unit—direct.
Ice cube capacity—from 82 to 146 cubes; from 2¾ to 13¾ lbs.

WOLFE ENGINEERING & MFG. CO., INC.
1408-14 Vernon St.

Refrigerant—ammonia and sulphur dioxide.
Control—manual and automatic.
Condenser—all types.
Method of cooling—air and water.
Compressor—reciprocating.
Drive—belt.
Seal—ground joint.
Capacity—ice melting, from ¼ to 15 tons.
Motor sizes—from ¼ to 30 H. P.
Type of cooling unit—direct and brine.
Ice cube capacity—any amount.
Specialize on commercial work only—⅛ to 2 ton sulphur dioxide; ¼ to 15 tons ammonia.